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THIS VOLUME IS DEDICATED TO

CHRISTOPHER EVELYN BLUNT

IN CELEBRATION OF HIS
EIGHTIETH BIRTHDAY

CONTENTS

THE COMPOSITION OF THE CUERDALE HOARD

C. E. BLUNT

THE Cuerdale treasure was found on the south bank of the River Ribble in Lancashire on 15 May 1840, on the property of Mr William Assheton of Downham Hall, when repairs to the river bank were being carried out.[1] The find, consisting of some 7,000 coins and nearly 1,000 ounces of silver ingots and cut up ornaments, naturally aroused great local interest and the *Preston Chronicle* of 23 May 1840 wrote: 'the numismatic collectors and connoiseurs (*sic*) are quite in a *furor* about the matter, and the spot where the treasure was found has, since the discovery, been more zealously scratched than any dunghill in the best populated poultry yard!'. The basic report on the coins, was published by Edward Hawkins[2] but no complete record is possible as it is clear that, in spite of all the efforts of Mr Assheton and his steward, a number of significant coins were abstracted before the inquest and many of these were not returned. The workmen too are reported as having coins for sale later on. Two major abstractions can be established today, the one with certainty, the other with a fair degree of confidence. The first was by Mr Assheton's steward who acted in the mistaken belief that he was doing his employer a service. The latter was in Italy at the time of the discovery and remained abroad for some time after, but, immediately on his return, he placed this parcel in the hands of the authorities. This must have happened after the inquest, for many of the coins, including more than one that was unique, were in due course returned to Mr Assheton. Hawkins must too, by this time, have got a certain way with his report because he publishes most of this parcel as an appendix to it. The steward Hawkins treats generously, acknowledging his good intentions, remarking how little the law of treasure trove was understood, and adding 'it is not, therefore, a subject of surprise that a zealous servant should retain possession of what he strongly felt was his master's property'.

But of other abstractions Hawkins is forthright in his condemnation. Some others, whom he does not identify, abstracted, he says, 'several coins of considerable interest' to satisfy 'the avidity of collectors'. Of these he writes: 'such ill-doings would not be so frequent if it were the general practice to give to actions their simple and appropriate names. Theft is theft, by whatever palliative people may attempt to veil its deformity'.[3]

The second major abstraction appears to have got into the hands of a Mr Joseph Kenyon of 7 Butler Street, Preston. Within a month of the discovery, and while Mr Assheton was still in Italy, Kenyon had sent a brief account of the hoard, dated 10 June 1840, to the *Numismatic Chronicle*[4] and at the inquest, held in August 1840, he appeared, with a Mr Thomas Glover of Manchester, as an expert witness as to its composition.[5] Curiously there is no reference to anybody from the British Museum having attended the inquest. It must, however, have been an important occasion in Preston. The Crown was represented by the attorney-general and the solicitor-general of the Duchy; Mr Assheton by a Mr John Addison, and the coroner sat with a jury of sixteen members who are named in the *Preston Chronicle*

[1] The names of the fourteen men working on the job under the direction of Jonathan Richardson, Mr Assheton's bailiff, are given in Frank Coupe's *Walton-le-Dale* (Preston, 1954), p. 22. I owe this reference, and the extracts from the local papers cited below, to the kindness of Mr B. J. N. Edwards, the Lancashire County Archaeologist.

[2] E. Hawkins, 'An account of coins and treasure found in Cuerdale', *NC* 1st series, 5 (1842–43), 1–48, 53–104. But note that the paging in the offprint differs and that pages 53–7 of the original have actually been reset.

[3] Hawkins, p. 104.

[4] J. Kenyon, 'Discovery of Ancient Coins and other Treasure near Preston', *NC* 1st series, 3 (1840–41), 62–5.

[5] *Blackburn Standard* reprinted in *The Preston Pilot and County Advertiser*, 21 August 1840.

of 22 August 1840. They consisted of a watchmaker, two upholsterers, a cotton spinner, a printer, a gardener, a draper, a stationer, a hosier, a gilder, two gentlemen, a tobacconist, a hatter, a pawnbroker and the foreman, whose occupation is not given.

The following coins are recorded as having passed through Kenyon's hands. Those specifically stated to be from Cuerdale, are marked with an asterisk, but the Cuerdale provenance may safely be accepted for all:

ALFRED

1.* *BMC* v Moneyer Burgnoth = *SCBI* Norweb 141
2.* *BMC* v Moneyer Heahstan = *SCBI* Oxford 247
3. *BMC* vi London monogram, Haigh 1870, pl. iii, 2[6]
4. *BMC* vi London monogram, Haigh 1870, pl. iii, 3
5. *BMC* viii Lincoln monogram, Heribert pl. IV, 2 = *BMC* 81
6. *BMC* ix London monogram, moneyer Herewulf pl. IV, 5 = Lockett 2703
7.* *BMC* ix London monogram, moneyer uncertain = BM, ex Lockett 511
8. *BMC* x London monogram, no bust, moneyer Tilewine = BM, ex Montagu, 1895, 535. Correspondence Martin-Lindsay, (see below)
9. *BMC* xviii 'Orsnaforda', Haigh 1870, pl. VI, 1 = ? Bruun 65(a)
10. *BMC* xviii 'Orsnaforda', 'very blundered', *NC* 1st series, 7 (1844–5), 39–40
11.* *BMC* xxi Exeter, = Lockett 500

Temp. ALFRED

12.* Halfpenny without king's name, moneyer Everat = *SCBI* Cambridge 563

ARCHBISHOP PLEGMUND

13. Type DoRo moneyer not stated. Correspondence Martin-Lindsay.

This is a remarkable assembly of coins, most of them great rarities. Nos. 1 and 2 are of a distinctive type of considerable rarity. In fact, before this find Hawkins believed that only two whole coins and one fragment were known.[7] The two coins of type vi, though not so rare, would have stood out among the rest as the type was relatively scarce in this hoard. No. 5 is unique. Kenyon published it in 1843 saying (somewhat disingenuously) that 'it was found in the neighbourhood of Preston, and came into my possession some time ago'.[8] Of No. 6 one other specimen is known, *BMC* 115 from Cuerdale. No. 7 is unique. No. 8 was also believed to be unique, but a second turned up in 1951 in a parcel that also clearly emanated from Cuerdale. When the Montagu coin was sold to the BM in 1895, it had a pedigree going back no further than the Huxtable Sale of 1859, but a letter from the Rev. J. W. Martin to John Lindsay, dated 28 Jan 1842, says that at that time it was in the possession of Kenyon.[9] No. 9 calls for no comment. No. 10 Kenyon published in 1844/5 saying that 'it was lately washed up by the *silvery stream* of the Ribble and fell into my hands'.[10]

Of No. 11 only one other specimen was known (*BMC* 79, ex Cuerdale) until the Morley St Peter hoard produced a third. It is interesting to note that the only whole specimen then known of the corresponding coin of the Winchester mint, *BMC* 156, which came from the Cuff Sale of 1854, was stated by Martin in a letter to Lindsay dated 29 November 1841 to be from Cuerdale.

No. 12 is a unique variety (omitting the king's name altogether) of a denomination of which there are few examples in the hoard. No. 13 could be any one of a number of known examples.

Joseph Kenyon is described in 1825 as an 'attorney's clerk'[11] and later ran a private

[6] D. H. Haigh, 'Coins of Ælfred the Great', *NC* 2nd series, 10 (1870), 19–39.

[7] Hawkins, pp. 11–12.

[8] J. Kenyon, 'The Mercian penny of Heribert', *NC* 1st series, 6 (1843–4), 163–8.

[9] Original correspondence of Martin-Lindsay in the possession of Mr Norman Shiel by whose kind permission reference is made to it here.

[10] J. Kenyon, 'Worcester Penny of Alfred', *NC* 1st series, 7 (1844–45), 39–40.

[11] E. Baines, *History, Directory, and Gazetteer of the County Palatine of Lancaster* (Liverpool, 1825), II. I owe this reference to Mr H. E. Pagan.

school at 7 Butler Street, Preston.[12] I have been unable to find out anything about the dispersal of his coin collection, but two of his rarest coins from Cuerdale turned up in the 1868 sale of another Lancashire man, Mr Thomas Norris of Bury, without, it should be noted, any reference either to Cuerdale or to Kenyon. Although the two letters that he published in the *Numismatic Chronicle* had shown considerable knowledge of the subject, Kenyon does not appear ever to have been a member of the Numismatic Society. The only reference to him that I have come across in contemporary writings is in a letter from Martin to Lindsay dated 10 December 1841: 'Mr. Kenyon of No 7 Butler Street, Preston, Lancashire, has a ten guinea coin of Plegmund with DORO in centre of the reverse. If you were to write to him, I have no doubt he would furnish you immediately with an impression in wax or plaster. I will not have any further communication or correspondence with him'.[13] The reference to 'a ten guinea coin' suggests that it was for sale and it is more than possible that Kenyon supplied some of the rarities in this series that turn up without provenance in auction sales of the two decades following the find. Certainly there is no sign of any public sale of a collection that looked like being his. No doubt any that remained in his hands at his death were sold privately to a dealer or a collector. There must still have attached to them some of the stigma of which Hawkins wrote so forcibly.

Another rather mysterious Preston man, described in the Montagu sale catalogue of 1895, as 'Dr Andrew Moore' and by Haigh in *NC* 1870, p. 27, as Andrew Moore, M.D. (he must therefore have been a medical doctor although I have been unable to trace him in medical works of reference) became possessed of at least two important coins. One, the unique penny of Halfdan of the 'two emperor' type, acquired by the British Museum at the Montagu sale of 1895 (lot 400) after it had passed through the Wigan[14] and Brice collections.[15] In the Montagu catalogue it is specifically stated to be from Cuerdale. The other is a barbarous variety of the London monogram type, with the head facing left. This is illustrated by Haigh in 1870, pl. III, 9, and may confidently be identified as the coin acquired by the British Museum at the Montagu Sale of 1895, lot 528. There it was said to be from the Stokes, Murchison (lot 189) and Shepherd (lot 73) sales, but it cannot be identified in the six-day sale in 1854 of Charles Stokes which contained no Anglo-Saxon coins. As with Kenyon's coins, I have been unable to trace any auction sale of Moore's collection, probably for the same reason.

I have no record of Moore's dates, but Haigh, writing to J. Rashleigh in a letter dated 30 January 1869, says 'this penny' (the two-emperor type) 'when I saw it, was in the hands of Dr Moore of Preston. He was then advanced in life and can scarcely now be living'.[16] It must be at least possible that Dr Moore acquired his Cuerdale coins from Kenyon. If my suggestion that Mr Assheton's steward and the latter picked out between them many of the great rarities, Kenyon might have matched the steward's selection of the two-emperor coin of Ceolwulf by picking for himself the only other coin of this type in the hoard, the Halfdan that Dr Moore later possessed.

Since then other smaller parcels have been located. The Rev. T. Hugo, a local curate, acquired a number of 'strays' which are said to have included a coin of Alfred by a previously unknown (but regrettably not identified) moneyer.[17] In 1951, a small parcel was bought from a local family by B. A. Seaby Ltd and this consisted of a cut halfpenny of Alfred's *BMC* type v; the London penny of *BMC* type x, referred to above; an Orsnaforda penny; and a penny of Edward the Elder of *BMC* type iii by the moneyer Wulfred. This again looks like being a careful selection.[18] Finally there was the bequest to the British Museum in 1956 by Mr T. W. Armitage of a number of fragments which he had described to me as

[12] I owe this information to Mr Roy Hawkins who kindly consulted local directories for me.

[13] The Martin-Lindsay correspondence referred to above.

[14] Bought en bloc by Rollin & Feuardent in 1872.

[15] Bought en bloc by Montagu in 1887.

[16] Letter in the possession of the writer.

[17] Rev. T. Hugo, 'On the field of Cuerdale', *Journal of the British Archaeological Association* 8 (1853), 330–35.

[18] 'Proceedings of the Society: Exhibitions', *BNJ* 26 (1949–51), 354–55.

'sweepings from Cuerdale'. This is probable, for smallish fragments tended to be little esteemed at the time of the discovery. Among them was one of an entirely new type with a name on the obverse beginning CE – which has reasonably been identified as Ceolwulf.[19]

If one may judge by the sample abstracted by Mr Assheton's steward (which as stated above was returned to Hawkins) the second major abstraction would also have contained a number of the more ordinary pieces in the find. Such pieces rapidly lose their provenance and today it is only some of the rarities that can be identified. Common coins were quickly being offered for sale and a warning is given against buying from the workmen, often at extravagant prices. The hint is added that the Duchy of Lancaster may commence proceedings against those who have bought them.[20]

What emerges very clearly is that at least two people, who had access to the treasure prior to its surrender to the coroner for the inquest, not only made a careful examination of the coins but picked out, in one case for himself, in the other for his master, a number of the greatest rarities in the hoard, clearly identifiable by their types. This was the case with the only two coins of the two-emperor type, with the unique Alfred *BMC* type iii, and with the one of the Lincoln type (*BMC* viii). It is quite possible too that another of this type, but by a different moneyer, first noticed in the Murchison sale of 1866[21] was also abstracted from the hoard, but it has no recorded provenance. Two of the three and a half Wessex type coins in the hoard (*BMC* xxi) and both of the only two known London monogram coins without the king's bust (*BMC* x) can now be shown to have been abstracted.

A study of the rare Alfred *BMC* type v points in the same direction. Hawkins's original report records six whole specimens and two fragments. Four of the former and both the latter went to the British Museum, as did a further unrecorded fragment (*BMC* 181–6 and 188). It may be assumed that the other two whole coins were duplicates, probably by Dunna and Liafvald. The supplement (those abstracted by the steward) added five whole coins. Six others have appeared in sales with alleged Cuerdale provenances[22] and a specimen by Dunna in the Cuff sale of 1854 is most likely to be a duplicate from Cuerdale. It is first recorded in a paper by Haigh dated 16 July 1842 with two others of the same type belonging to Kenyon to both of which the Cuerdale provenance is attached.[23] It is more than possible that at least one other, from the Wigan collection 1872, (not to mention several more that first appeared in the sale room in that century) originally came from Cuerdale. If we add these together (including the Cuff coin but not counting other possibles) we get a total of seventeen whole specimens and three fragments as likely to have come from the hoard. Of these the British Museum acquired at the time no more than four whole coins and the three fragments.

Of the extremely rare coins of the Mercian king, Ceolwulf II, Hawkins was, at first, able to record from the hoard a single specimen, which the British Museum secured (*BMC* 403). He quickly added to that the two-emperor coin that had been abstracted by Mr Assheton's steward. Two more of this king are known that are likely to be from Cuerdale. One with a pedigree going back to the Shepherd sale of 1885[24] is specifically stated to be from this hoard.[25] The other is at the neighbouring Stonyhurst College in a collection which contains a parcel which, though unprovenanced, is clearly from Cuerdale. Another coin of Ceolwulf

[19] H. E. Pagan, 'An Unpublished fragment of a coin of Ceolwulf II', *BNJ* 41 (1972), 14–20.

[20] 'Correspondence, Q. Q.', *NC* 1st series, 4 (1841–42), 186.

[21] Lot 194, now *SCBI* Lincoln, 2.

[22] Burgnoth and Heahstan, ex Kenyon; Heahstan, Seaby 1951; Eadelm, BM, ex Lockett 488; Liafwald, ex Martin 1859; another *SCBI* Mack 731.

[23] D. H. Haigh, 'On the coins of the Cuerdale find, with the names "Siefredus", "Cunnetti", and "Ebraice"', *NC* 1st series, 5 (1842–43), 106–17.

[24] Though the sale was in 1885 the collection had been formed by the Rev. E. J. Shepherd who died in 1874.

[25] It is so described in the Shepherd catalogue but by the time it came up in the Montagu sale of 1895 a provenance from the Assheton collection as well had been added. This is unlikely: it was not among the coins abstracted by the steward and there is moreover no reason to believe that Mr Assheton parted with any other than the thirty-two coins that he gave to the tenant farmer of the land on which the find was made and a Ceolwulf was not among these. These latter coins were sold at Sotheby on 2 February 1920, lots 160–72.

II may well be from this find. It is first recorded (without provenance) in the Cuff sale of 1854 (lot 292). Another first recorded in the Bruun sale of 1925 (lot 35) may possibly be. One can therefore point with reasonable confidence to four coins of this very rare king having been in the hoard and quite likely the Cuff example can be added to make a total of five. The British Museum secured at the time no more than one.

It is a sorry story. Here we have the most important coin hoard of Viking times, meticulously recorded by Edward Hawkins, to the extent that the material was available to him. And it is a measure of his care and skill that few coins of the Cunnetti type that pass through the sale room from time to time (and nearly all must be from Cuerdale) prove to be from dies not represented in the selection made by Hawkins for the National Collection.

Recently the suggestion has been made that six Carolingian coins from the mint of Quentovic in the Boulogne Museum are from the Cuerdale hoard.[26]

The case for this rests on

(i) an entry in the minutes of a meeting of the Boulogne Museum Committee on 10 December 1842 which records the presentation to the museum by the Duchy of Lancaster of six coins of Charles the Bald and thirty-six Cunnetti coins from the Cuerdale hoard.

(ii) the discovery of sixteen of the latter and of six Carolingian coins of the mint of Quentovic 'wrapped in a single sheet of paper', something that, prima facie, suggests that the two groups are to be associated, and, as the Cunnettis may convincingly be accepted to be from Cuerdale, would therefore point to a Cuerdale provenance for the Carolingian pieces as well, which the writers regard as 'sure'.

The Carolingian coins had with them a label reading 'V. 100.3 Charles le Chauve N° 6017 a 6022'. The inventory to which these numbers refer cannot, unfortunately, now be found, but two coins of Louis the Pious also of Quentovic, have a label in the same hand and with numbers not far distant from those on the other parcel. These two coins came from the Meyer collection which was dispersed in 1902, presumably lots 163–4, and the labels on the Charles parcel must be accepted as dating substantially after the gift of the coins from Cuerdale in 1842.

The Cunnetti coins had no label; the fact that only sixteen out of the thirty-six are today in the collection need have no significance: the registers show that duplicates have from time to time been sold or exchanged.

The objection to the Cuerdale provenance for the Charles coins, which the writers very properly point out, is that Hawkins listed no more than a single coin of Charles of Quentovic in the find and this coin was retained by the British Museum.[27] They add, however, that Hawkins's report is undoubtedly incomplete (as the earlier part of this note clearly shows) and they consider that the association of the two parcels is demonstrated by their being found wrapped together.

It is well known that a lot of material, some of it very important, failed to pass through Hawkins's hands, but there is, as far as my knowledge goes, only one case which did come to him failing to find a place in his published record. That is of two fragmentary coins of Hedeby which it is not unreasonable to believe Hawkins simply failed to identify.[28] But it is significant that they were none the less retained for the National Collection. No such doubt as to identification could arise over the Quentovic coins. That whatever was presented to Boulogne passed through Hawkins's hands can hardly be disputed since the gift came from the Duchy of Lancaster.

The coins at Boulogne consist of five deniers and one obole. The deniers are of two distinct types, the one with obverse legend GRATIA DI REX, the other CARLVS REX FR and, on the reverse, a cross with two pellets at the end of each arm. The obole is of the

[26] M. Dhénin and P. Lecleroq, 'The Coins of Quentovic from the Cuerdale Hoard in the Museum of Boulogne-sur-Mer', *BNJ* 52 (1982), 104–7.

[27] R. H. M. Dolley and K. F. Morrison *The Carolingian Coins in the British Museum* (London, 1966), no. 194.

[28] Michael Dolley and Tuukka Talvio, 'An Unpublished Hoard-provenance for the Ninth-century Coinage of Hedeby', *NC* (1974), 196–2.

former type as is the denier recorded by Hawkins. The second type (Morrison and Grunthal 1371) is, as the writers point out, of great rarity. In fact they can only record the specimen in the Paris collection and one in the Meyer sale, lot 354. They point out that the Brussels specimen, listed by Morrison and Grunthal is in fact a different variety. The British Museum has no example of this and, until 1956, had no obole. The coins at Boulogne would therefore have been welcome additions to the collection, and it is hard to believe that Hawkins, whose record is so good in securing for the British Museum all the coins it needed from those in the hoard that passed through his hands,[29] would have allowed these coins to leave.

How then can one account for the presence in the same wrapping of the Cunnetti and Quentovic coins? It is a sad fact, as the writers point out, that many provincial coin collections in France were often 'deregistered in order to hide them during the second world war', and it is known that steps had been taken in the first world war to protect the Boulogne collection. Either occasion might have resulted in some confusion of the material, and in attempting to sort things out, probably a number of years ago, it must be possible that the coincidence of the number of the Quentovic coins in the name of Charles with the number recorded as having been presented in 1842 would have led to their being placed with the Cuerdale coins. It may not be irrelevant that the Meyer collection had, as noted above, an example of the denier Morrison and Grunthal 1371, which is a coin of such rarity that the possibility cannot be ruled out that one of the Boulogne examples came from the Meyer sale from which it is known that purchases were made.

The museum at Boulogne would, of course, have had a special interest in coins of the neighbouring mint of Quentovic, something that is reflected in the presence in the cabinet of the two from the Meyer collection in the name of Louis. Had this special interest been recognized by Hawkins one would have expected him to have sent to Boulogne one or more of the Cnut coins of that mint, of which there were recorded in his original report some twenty-six specimens. There are none among the Cnut coins now in the collection at Boulogne. Experience of some other distributions of Carolingian coins from this hoard suggests that those in the name of Charles would, for the most part, have been of the mints of Melle and Le Mans. Over ninety per cent of the coins of Charles in the hoard, as recorded by Hawkins, were from mints in the west of France and no mint outside that area contributed more than ten coins at most.[30]

On the evidence so far adduced, and from what we know of Hawkins's methods, it does not appear to the present writer that a Cuerdale provenance should be accepted for the Quentovic coins of Charles at Boulogne.

I am greatly indebted to Monsieur Dhénin and to Monsieur Leclercq, who have most courteously answered various points that I have raised, and in particular to the latter who so kindly gave me facilities to inspect the actual coins at Boulogne. I am also indebted to Mr H. E. Pagan for details from the Meyer sale catalogue.

[29] An exception is the parcel submitted on behalf of Mr Assheton, which, for some reason unexplained, was returned to him.

[30] C. S. S. Lyon and B. H. I. H. Stewart, 'The Northumbrian Viking Coins in the Cuerdale Hoard' *Anglo-Saxon Coins*, edited by R. H. M. Dolley (London, 1961), p. 98.

THE SHREWSBURY HOARD (1936) OF PENNIES OF EDWARD THE ELDER

PAUL ROBINSON

THE Shrewbury hoard of coins of Edward the Elder was found in February 1936 in Castle Foregate, Shrewsbury, by workmen employed by the Co-operative Wholesale Society Building Department (Vere Street, Salford), while digging foundations for a new garage for the Shrewsbury Industrial Co-operative Society, replacing a group of cottages which until then had constituted Britannia Place. The findspot lies about 300 metres outside the conjectured northern edge of the Saxon *burh* and either on or close to one of the routes into and out of the town – the only one, incidentally, which does not involve a river crossing, although it does run close to the Severn.

The chief source of information for the discovery is an account in the *Shrewsbury Chronicle* of 6 March 1936, but it provides very few details of either the nature of the find or the circumstances of its discovery. The coins were found about a yard below the ground surface. There is no reference to a container, suggesting that the coins may not have been within a pottery or metal vessel but in one made of a perishable material, such as wood, leather or cloth or perhaps none at all. The coins were arranged neatly in stacks, i.e. *rouleaux*, and are said to have numbered two hundred in all. This estimated figure should, however, be treated with caution. The statements in the *Shrewsbury Chronicle* account – the first blow of the pick shattered half of them to pieces and many of them crumbled away to powder, which is confirmed by the broken and chipped state of the surviving coins – suggest that it cannot be considered reliable. It could be an exaggeration or an underestimate of the true figure, although the reference to *rouleaux* suggests that it may well err on the low side. According to the classification of the sizes of early medieval coin hoards from the British Isles proposed by Michael Dolley,[1] this would almost certainly rank as a 'three star' hoard, i.e. comprising between 120 and 1199 coins. Excluding the extremely large hoard from Cuerdale and the less well documented find from Drogheda (1846), it may be considered with the Harkirk find (1611) as one of the largest hoards deposited in the first quarter of the tenth century as yet known from the British Isles. This alone makes it so particularly unfortunate that so little is known of its contents. It may be noted at this point that there is no suggestion that any jewellery or ingots/hack-silver were present in the find. There is also no hint that it included any dirhems or fragments, which would certainly have survived the ravages of time and the circumstances of the discovery better than their European counterparts. This is as one would expect of a find made in the heart of English Mercia and which comprised almost certainly, as we shall see, mainly West Saxon coin.

The *Shrewsbury Chronicle* records that Mr J. Judge, the foreman in charge, identified the coins as of silver and 'sent them up to the museum where there are seven remaining.' At present there are only six coins from the hoard at the Clive House Museum, Shrewsbury, and no details exist of a seventh one. However, the coins had, in fact, been taken to the museum by Mr E. Hampson, who at that time was secretary of the Shrewsbury Industrial Co-operative Society. Mr Hampson has written to me that he was not present at the discovery and that he did manage to secure only six coins from the find, apart from two very small fragments which he himself retained: over the years these fragments deteriorated without any laboratory conservation and were discarded by him only recently. Mr David

[1] R. H. M. Dolley, *SCBI* 8: *The Hiberno-Norse Coins in the British Museum*, (1966), 47ff.

Gibson, who was also employed at that time with the S.I.C.S., has described the discovery of the hoard as follows:

> After Mr Judge had pronounced them 'silver coins', a completely undisciplined scramble occurred; workmen dropped tools to join the search and soon there were no more than odd traces from which Mr Hampson managed to secure the best preserved.[2]

The fate of these other coins is unknown. Contact with other museums in the Midlands and North of England has confirmed that there are no strays from it in any museum collection in those areas.

No coroner's inquest was held on the find. At the time when A. J. H. Gunstone was preparing *SCBI* 17: *Ancient British, Saxon and Norman Coins in Midlands Museums* (1971), the coins were by accident not brought to his attention and so were not included in that volume. They have been briefly summarised in the *Transactions of the Shropshire Archaeological Society*, 59 (1978), 260f. The six surviving coins, all regal issues in the name of Edward the Elder, are as follows:

1–4 *BMC* ii = Br. 13 = North 649 (two line type): moneyers – Athelulf, Hathebald, Rægenulf (2)
5 *BMC* iii = Br. 12 = North 651 (portrait type): moneyer – Wulfred
6 *BMC* xiv = Br. 2 = North 655 (cross moline type): moneyer – Wulfheard.

The coins are classified below according to a scheme proposed by Mr Stewart Lyon in an essay in a forthcoming volume on tenth-century coinage in which the coins of Edward the Elder are divided into six series or phases. The individual weights are not given as most of the coins are chipped or incomplete.

1. *BMC* ii Athelulf

Obv. +EADVVEARDREX *Rev.* ∴/ᚩÐEL+/+++/VLFMO/∵

Die ratio ↗ . Diameter of flan: 21 mm. From the same dies as *BMC* 7, from the Cuerdale hoard (the diameter of which is also 21 mm).

The coin is from the second series of the coins of Edward the Elder. It has on the obverse a small inner circle, 10 mm in diameter, the size of which is characteristic of both series one and two. The alignment of the central cross on the obverse with the initial cross (in contrast with the following coin), the oval, slightly tilted form of the letter O and the smaller, neater lettering on both obverse and reverse are, however, specifically characteristic of the second series.

The large number of coins of Athelulf in the Forum and Vatican hoards shows that he was a moneyer of considerable importance under Edward the Elder and it is reasonable to identify him with the Athelwulf who struck coins of Æthelstan's type v at Winchester. He

[2] Quoted in a letter to the writer from Mr W. E. Jenks.

may or may not be the person of the same name who struck coins at Canterbury in the name of Archbishop Plegmund in the first series of his coins (North 253) and in the chronologically later Pallium type (North -), the sole recorded example of which was in the Harkirk hoard, and is clearly to be disassociated from Athulf (whose name is consistently spelled in this form), who struck coins of types *BMC* vii, ix and xi of Edward the Elder at a mint in North West England.

2. *BMC* ii Hathebald

Obv. +EADVVEARDREX *Rev.* ∴/HAÐE/·+·/BALDM°/∵

Die ratio ↖. Diameter of flan: 20.5 mm.

A coin of the same dies is in the British Museum (1928/6/11/4), ex L. A. Lawrence and possibly the same coin which had formed part of lot 149 in the sale of the collection of William Hoare of Southsea (Sotheby etc., 25 March 1850). They have an obverse die-link with *BMC* 20, a two-line type penny of the moneyer Beornwald from the Cotton collection, and from a major hoard found probably in the North Midlands in c.1600. A coin of Hathebald from different dies occurred in the Forum hoard (1883) and is no. 44 in De Rossi's list.[3] This is a chronologically later coin with neat, Winchester style lettering and with a positive attempt in the reverse legend to leave a space between EADVVEARD and REX, and between REX and the initial cross. This coin shares an obverse die-link also with a coin of Beornwald in the British Museum (not in *BMC*; 1962/3/7/4, ex Spinks). Beornwald/Beornwold are clearly to be identified with Bernwald, who struck the prototype OHSNAFORDA coins at, it is now believed, Oxford, late in the reign of Alfred.[4] (Whether the moneyer Beornwald who struck mint-signed coins at Wallingford under Æthelstan is the same moneyer or a homonymous son or grandson is uncertain.) The coins of Edward the Elder's moneyer, Hathebald, may then be attributed with reasonable probability to Oxford.

The Shrewsbury hoard coin has a very small inner circle on the obverse measuring 9 mm in diameter, characteristic of both the first and second series of the coins of Edward the Elder. The large, ungainly lettering and the fact that the central cross is set obliquely and aligns neither with the initial cross nor the first letter of the legend are characteristic of the first series. The form of the A, however, which is uncapped and has a wedge at the apex, belongs rather to the second series. This would suggest that the coin is transitional between the two series. It is, however, significant that no coins of Hathebald occurred in the Cuerdale hoard, suggesting that the coin may be ascribed alternatively to the latter part of the second series, but still showing several features characteristic of the first series. The phenomenon is also to be seen on certain late portrait type pennies of the moneyer Wulfred which may be ascribed to the latter part of the second series from the style of the king's bust on the obverse, which is shown with 'linear' drapery, a post-Cuerdale feature: the reverses, however, employ the large, ungainly lettering more characteristic of the first series of Edward the Elder's coins (e.g. F. Elmore Jones (Glendining, 12 and 13 May 1971) lot 46).

3. *BMC* ii Rægenulf

Obv. +EADVVEARD R EX *Rev.* ∴/RÆGEN/+++/VLFM⁻⊙/∵

Die ratio ↓. Diameter of flan: 21 mm. From the same obverse die as the following coin.

4. *BMC* ii Rægenulf

Obv. [+E]ADVVEARD R E[X] *Rev.* ·/[R]ÆGEN/[+]++/VLFIT⁻O/·

Die ratio →. Diameter of flan: 20.5 mm. From the same obverse and reverse dies as *SCBI* 6: *National Museum of Antiquities of Scotland, Edinburgh*, Part 1, 100 and the same obverse die as the previous coin.

[3] 'The Forum Hoard, found in excavations near the house of the Vestal Virgins 1883', Appendix I in C. E. Blunt, 'The Coinage of Athelstan, King of England 949–939', *BNJ* 42 (1974), 35ff., pp. 141–155. C. F. Keary 'A hoard of Anglo-Saxon coins found in Rome and described by Sig. de Rossi', *NC*, 3rd ser., 4 (1884), 225–55.

[4] Presidential address by Stewart Lyon, 'Historical Problems of Anglo-Saxon Coinage – (4) The Viking Age', *BNJ* 39 (1970), 196–97.

These two coins belong to the third series of the coins of Edward the Elder. The diameter of the inner circle on the obverse measures 12 mm and it was subsequent to the second series that it broadened significantly from 9–10 mm to between 12 and 13 mm. At the same time the flan size increased to between 21 and 22 mm. The small size of No. 4 above would suggest that the coin is either transitional between the second and third series or that it was struck relatively early within the later series. Its die duplicate, however, *SCBI Edinburgh* 100 measures in diameter between 21.1 and 21.5 mm, a more acceptable figure for the third series. The lettering on the obverses and on the reverse of No. 4 is small and neat, here characteristic of the third series. The space between the final D of EADVVEARD and the R of REX suggests a preliminary attempt to separate visually the two words. The effect, however, is lost by the long space between the R and E of REX. As with the coins of the second series, the A is barred with a straight bar and capped with a small wedge.

Rægenulf struck mint-signed coins at Winchester under Æthelstan and the style and quantity of the surviving coins in his name shows that he was working at that mint under Edward the Elder also.

5. *BMC* iii Wulfred

Obv. ⊣EADVVEARDREX *Rev.* ∴/VVLF+/+++/REDΠ⁀⊙/∵

Die ratio ↖. Diameter of flan 20.5 mm. From the same obverse die as F. Elmore Jones (Glendining, 12 and 13 May 1971) 46, ex Vatican hoard (Glendining, 16 May 1929) 38.

This coin dates late in the series of portrait type pennies by Wulfred, having linear drapery on the king's bust on the obverse and neat, 'Winchester' style lettering on both the obverse and reverse. Although the F. Elmore Jones coin to which it is die-linked has a reverse with large ungainly lettering, characteristic of the first series of Edward the Elder's coins, both this and the Shrewsbury hoard coin must date after the deposition of the Cuerdale hoard, as the portrait type coins there were all of the early type with 'solid' rather than linear drapery on the king's bust. The deposition of the Cuerdale hoard may be placed in the second phase of the coins of Edward the Elder. The style of lettering and the small diameter confirm that the coin dates before the end of the second series.

An obverse die-link has been noted by Mr Lyon between *BMC* 67, a non-portrait type penny of Wulfred from the Cuerdale hoard, and one of the moneyer Athelulf from the Morley St Peter hoard (*SCBI* 26: *Museums in East Anglia*, 123). Athelulf, it has been suggested above, worked at Winchester and it follows that Wulfred probably operated at that mint too. This is supported by Wulfred's obvious considerable importance as a moneyer, shown by the large number of dies he may be seen to have employed in both the portrait and the two-line types.

6. *BMC* xiv Wulfheard

Obv. ⊣EAD[V]VEARD▸REX *Rev.* Δ/VVLFHE/◦ (floral motif) · ◦/ARDΠ⁀⊙/Δ

Die ratio ←. Diameter: 22 mm. (HE ligatured and lower triangle inverted)

Type *BMC* xiv of Edward the Elder has been the subject of a recent paper by the late Dr Michael Dolley in which it has been shown that those coins of this type struck by the moneyer Wulfheard were probably minted at Winchester, while the sole surviving coin of the type by Eicmund (who had also struck coins in the name of Archbishop Plegmund) was a product of the mint at Canterbury.[5] This is supported by the styles of the lettering on the coins of the two moneyers. Those by Wulfheard have a neat sophisticated lettering, characteristic of the dies cut in or for the Winchester area in the second and third series of the coinage of Edward the Elder; on the coin of Eicmund, the lettering is more crude and more at home in style with other coins attributable to the mint at Canterbury.

The type is extremely rare. Five other examples struck by Wulfheard may be traced,

[5] Michael Dolley, 'The Mint or Mints of BMC type XIV of Edward the Elder', *NCirc* (1976), 276f.

while one other, whose present location is unknown, is recorded from the Harkirk (1611) hoard. There are two surviving examples of a variant form, where the normal reverse of a type *BMC* iii coin replaces the characteristic type *BMC* xiv reverse. These may be classed as type *BMC* xiv/iii 'mules'. Six obverse dies for the type can be recognised, and for the true type *BMC* xiv, four reverse dies. The die combinations are as follows:-

Obverses	A	B	C	D	E	F
	\/		|	|	|	|
Reverses	a		b	c	d	two-line type reverse as type *BMC* iii

The coins have an added interest in that on the reverse dies appear the following die identification marks:

a a pellet abuts the left side of the left annulet
b there is unnaturally wide spacing of the vv of the moneyer's name
c the left annulet has a pellet in the centre
d a pellet abuts the left side of the right annulet.

A comparable mark appears on only one of the obverse dies. On E there is a pellet adjacent to the final D of the king's name.

The coins are as follows:

Aa British Museum (*BMC* 113). An unprovenanced eighteenth-century accession. It is almost certainly the Tyssen coin illustrated in Ruding plate 16, no. 6. Illustrated in J. J. North, *English Hammered Coinage* (1963), plate ix, no. 8.

Ba *SCBI* 16: *Ancient British, Romano-British and English Coins formed by Mrs Emery May Norweb*, Part 1 (1971) no. 152, ex Baldwins and said to be 'probably a stray from the Vatican (1928) hoard.'

Cb *SCBI* 9: *Ashmolean Museum, Oxford*, Part 1 (1967) no. 317, ex Lockett 515, Drabble lot 406 and from the Vatican (1928) hoard.

Dc C. E. Blunt collection, ex Ryan lot 753, Bruun lot 76, Carlyon-Britton part 1, lot 371, with provenance going back to the Dimsdale sale (1824), lot 479.

Ed Shrewsbury Museum, from the Shrewsbury (1936) hoard.

F/two-line type
i. R. C. Lockett Lot 2720, from the Vatican (1928) hoard.
ii. *SCBI* 20: *The R. P. Mack Collection* (1973), No. 769, ex Ryan lot 754, from the Vatican (1928) hoard. From the same dies as the previous coin. Both are die-linked to a type *BMC* iii (portrait type) penny of Edward the Elder by the moneyer Wulfheard.[6]

Unlocated coin from dies not identifiable.
i. Harkirk (1611) hoard, which was subsequently sent into Wales for safety during The Civil War.

Although it has been argued that type *BMC* xiv should be dated after c.915,[7] Mr Lyon has now shown that a substantially earlier commencement date for the type must be accepted, c.910.[8] The type *BMC* xiv/iii 'mules' date late within the second series of Edward the Elder's coins because of their small flan size and because they employ a reverse die also found on a type *BMC* iii (portrait type) coin of this series. The true type *BMC* xiv coins are, however, generally substantially larger in size – Aa measures 21 mm; Dc and Ed are 22 mm, while Cb measures 22.6 mm. The square, neat and precise lettering of the type and the care in the spacing to leave gaps between the king's name and REX, and between REX and the initial cross are characteristic of Winchester coins of the second and particularly the third series of coins of Edward the Elder.

The approximate date for the concealment of the Shrewsbury hoard depends upon two factors – the evidence from the coins themselves and the inferences that may be drawn from their findspot. It is regrettable that we know of six coins only from the find and that we are obliged to accept them as a representative sample from it. As a group, however, the

[6] Stewart Lyon, 'A Significant "Winchester" Die-Link in the Reign of Edward the Elder (899–924)', *NCirc* (1983), 261–62.

[7] Dolley, 'The Mint . . . of Edward the Elder'.

[8] Lyon, 'Winchester Die-Link'.

coins appear significantly compact both geographically and chronologically. Five of the six coins come from Winchester; the last probably comes from the not too distant mint of Oxford.[9] The dating of the individual coins may be summarised as follows:

1. (Athelulf) From series 2 with a die-duplicate in the Cuerdale hoard.
2. (Hathebald) Possibly from late in series 2.
3, 4. (Rægenulf) From series 3, but probably early.
5. (Wulfred) Late in series 2.
6. (Wulfheard) From series 3.

Conspicuously absent are not only coins of Alfred (which were well represented in the Harkirk hoard, the only other English hoard so far known to have included a type *BMC* xiv coin) but also true coins of series 1 of Edward the Elder, as seen in the Cuerdale hoard. This would suggest that the Shrewsbury hoard comprised entirely or principally recently struck coinage brought together in Wessex and possibly at Winchester itself.

If this is so, then because the first coin has a die-duplicate in the Cuerdale hoard, the Shrewsbury hoard should date within a tolerably short period of the deposition of that hoard, perhaps as short a time as five or so years. The date of the deposition of the Cuerdale hoard is currently put at c.903. Mr Lyon has, however, suggested to me that this figure might well be brought forward to c.905 for two reasons. First, two chronologically distinct series of coins of Edward the Elder are present in it. Secondly, the hoard included a fragment of an Italian coin in the names of Pope Benedict IV and Louis the Blind, which appears to be restricted in date to between 901 and 903. Allowance should be made for reasonable time for the coin to reach England from Italy. On this dating, therefore, the Shrewsbury find may have been concealed in c.910.

With regard to the actual concealment of the hoard, it is possible that the deposit of such a large quantity of coin from Wessex close to one of the most important *burhs* of Mercia may be associated in some way with the activity of the West Saxon army either in northern Mercia or in association with the Mercian host. It is not inconceivable that Edward the Elder's army participated in the restoration of Chester in 907. In 909 he dispatched a combined Mercian and West Saxon host against the Northumbrian Danes, while in 910 a rapidly conscripted army from Mercia and Wessex harried a retreating Danish army which earlier in that year had raided into Mercia as far as the Bristol Avon and finally annihilated it at Tettenhall in Staffordshire. (The raid would have provided a suitable explanation for the concealment for the hoard but would not explain in itself the strong West Saxon element in it.)

Michael Dolley, however, has drawn attention to the phenomenon of the occurrence of a small number of medieval hoards which had been concealed 'just outside the then limits of towns'.[10] He suggests that such hoards may have been concealed by merchants or travellers before entering a town and not wishing to walk its narrow streets with wealth about their person. On this interpretation the Shrewsbury hoard may have been concealed by a merchant or traveller from Wessex. It finds a good parallel in the Shaftesbury hoard of coins of Æthelred II, concealed a short distance outside the Saxon boundaries of that town and, to judge from the high proportion within it of coins struck at Lincoln and York, quite plausibly concealed by a merchant or traveller from the North Eastern Danelaw, mis-trustful for his personal safety in Wessex.[11]

[9] It should be noted that as early as the first decade of the tenth century there was at least one major mint active in north west Mercia. The absence of Mercian coins in the hoard (save for that which may be attributed to Oxford, which was not annexed to Wessex until 910) thus confirms the southern emphasis of the hoard.

[10] R. H. M. Dolley, 'The Shaftesbury Hoard of Pence of Æthelræd II', *NC* (1956), 267–80.

[11] It could, however, be argued that a town-dweller anticipating the plundering and perhaps firing of his town would be more likely to conceal his wealth in the open countryside rather than within its walls. Because, however, of the 'non-local' nature of both the Shrewsbury and Shaftesbury hoards, Dolley's 'traveller' hypothesis still remains valid for these hoards.

As at present the precise dating of the coins of Edward the Elder is not possible and as there is no certainty that the Shrewsbury hoard must be associated with a particular historical event, the concealment of the find cannot be closely dated. At the present state of our knowledge the approximate date of c.910 suits both the numismatic and historical evidence.

Acknowledgments

I am grateful to Mr W. E. Jenks for first drawing my attention to the Shrewsbury find and for his help in locating people who had been involved in its discovery; to the authorities of Shrewsbury Museum for permission to publish the coins and to the National Museum of Wales for providing the photographs of them. Mr C. E. Blunt and the late Professor Michael Dolley gave – as always – much help and friendly advice. Above all, however, I am indebted to Mr Stewart Lyon who has freely shared with me his unrivalled knowledge of the coinage of Edward the Elder and allowed me to see in advance and quote from his unpublished study of the coins of that king.

A NEW 'STANDARD' TYPE FOR THE REIGN OF KING STEPHEN

PETER J. SEABY

THE purpose of this note is to place on record a new type of the so-called 'York Group' – a designation the writer would prefer to replace, at least for the time being, by the term 'ornamented coinages'.[1] The new coin is a chipped cut-half penny, or denier, found in a tray of uncertain and dubious medieval coins in a cabinet of Messrs A. H. Baldwin and Sons Ltd.; and it is likely to have been there for some twenty years or more, its original provenance quite uncertain. It was through the kindness of Mr Peter Mitchell, who knew of the writer's interest in this series, that the coin passed temporarily into the writer's possession. It is now in the national collection.

The fragment weighs 8.7 grains (0.565 gm) and, basing a reconstruction on the circumference and the remaining area, this would suggest a weight of approx. 17.1 grains (1.11 gm) for the complete coin, a figure well within the 16–20 grains range for the 'ornamented' series as a whole. Though incomplete, enough of the design is available to enable a reasoned guess to be made of the complete design (Fig. 1).

The central figure appears to be standing as no part of a throne is visible, and that this figure represents a royal personage is indicated by the crown which has a globular ornament at each extremity. The face is not entirely clear but the nose and eyebrows can be distinguished. A semi-circle to the right of the figure may be intended for a cloak and an arm extends horizontally with a barely visible hand which grasps the shaft of a standard. To the top left of the figure there is part of an object which may be the fleur of a sceptre-head or possibly a branch. Between the central figure and the standard are two uncertain objects: the upper may be a four-spoked wheel, while the lower seems to be a shield with irregular indentations, perhaps intended for roundels. A five-, six- and seven-spoked wheel occurs on some of Stephen's Flag type pennies and on some of the Eustace Knight coins, and a four-spoked wheel appears on one of the Stephen Cross Moline variants reading WI·S·GNETA (Mack 215) and on one of the petits-deniers of Eustace of Boulogne struck at Lens.[2] A shield with roundels occurs on the Flag pennies, on some of the Eustace Knight coins, on a denier of Count Hugh II of St Pol,[3] on certain of the petits-deniers of St Omer[4] and on other unattributed coins of the Pas-de-Calais region of northern France.[5] To the right of the standard below the banner is a cross pattée. The coin may be completely anepigraphical or the cross may serve as an initial cross for an inscription that could commence to the left of the figure, though if this was the case the inscription must be relatively short, probably five or six letters at the most.

On the reverse the central design is a cross pattée with a crescent in one of the visible angles and a quatrefoil of pellets in the other, and perhaps these two symbols alternate in the missing angles. There are two inner circles, the smaller having a number of pellets set around it, presumably sixteen on the complete coin. It is not clear if these are intended to be equidistant from each other or if they are set in four groups of three pellets, each group arranged opposite the extremities of the cross, and with additional pellets corres-

[1] This coin was exhibited by the writer at the Congress of the British Association of Numismatic Societies held at Cambridge in September 1981 in illustration of a short paper entitled 'A new Anglo-Boulonnais coin type.'

[2] Cf. P. d'Avant, *Monnaies Féodales de France*, 6753 and pl. CLVII, 20; but the specimen in the Bibliothèque Nationale, Paris, has a wheel of four spokes in two angles of the cross.

[3] C. Richebé, *Les Monnaies Féodales d'Artois*, 40.

[4] Grierson coll., ex Lockett III 536 (Haeck 295); and E. Caron, *Monnaies Féodales Françaises*, 695 and pl. XXVII, 20.

[5] Caron, 696 and 697, pl. XXVII, 21 and 22.

ponding to each angle. It may be of some significance that on the reverse of Stephen's second substantive coinage, possibly to be dated c.1149–c.1151, three pellets are set at the end of each limb of the cross. It has been suggested that these may represent the red roundels (*torteaux*) that appear on the arms of the counts of Boulogne, but they may also serve as the symbol of Stephen's name-saint, St Stephen Protomartyr, i.e., the stones associated with his martyrdom.[6] A double inner circle is a feature that does not occur on undoubted English coins with the single exception of Henry I type 6. Double circles do occur on one variety of the Eustace Lion type and on a number of other twelfth-century issues of the Pas-de-Calais region, including a denier of Eustace III or IV of Boulogne.[7]

The ornamentation between the middle and outer circles links the coin with one die-variety of Stephen's Two-figure type. This is the unique die variety *BMC* 261 (Mack 220*c*) which is of neater style than coins from other Two-figure dies (Fig. 2). Though Brooke had traced its pedigree back to the Cuff collection (lot 764), sold in 1854, it would seem to be the coin illustrated by L. Deschamps in the *Revue Numismatique* of 1839. According to information supplied to Deschamps by Joachim Lelewel it was then in the possession of a M. Ducas of Lille,[8] but in Deschamps's 1885 survey of the coinage of Boulogne he remarks that he did not know what had become of the coin.[9] This, then, is the second Two-figure coin which appears to have originated in France, the other being Mack 220*l*, the Reynolds specimen (lot 84) which was described as having been 'procured in France.' There is no evidence that either of these coins came from a French hoard, though this must remain a possibility.

FIGS 1–3. 1 New Standard type (×4); 2 Stephen, Two-figure type (*BMC* 261); 3 Stephen, Flag type (*BMC* 255).

[6] On a denier of Bishop Adalberon IV of Metz (1103–15) the three stones of St Stephen, the patron saint of the city, are repeated four times around the inner circle (*vide* P. Ch. Robert, *Monnaies, Jetons et Médailles des Éveques de Metz*, 474).

[7] P. d'Avant, 6515 and pl. CLIV, 18.

[8] L. Deschamps, 'Note sur deux monnoies inédites, se rattachant à l'histoire de Boulogne-sur-Mer', *RN* 1st ser. 3 (1839), 284–94. In Lelewel's *Numismatique de Moyen-Age* (1835) the name of Charles-Louis Ducas, of Lille, appears in the list of subscribers and his profession is given as *agent-de-change*.

[9] L. Deschamps de Pas, 'Étude sur les Monnaies de Boulogne', *RN* 3rd ser. 3 (1885), 264–95, at 281, n. 1.

The first visible device around the circumference is a shield with roundels, presumably the arms of the county of Boulogne. Only one roundel is visible but six are clearly intended on the Two-figure penny.[10] The second device appears to be a rectangular figure divided by two incuse crossing lines, but by reference to the Two-figure coin it can be seen that it is a rather poor copy of a neat heraldic fret. This fret also appears on Stephen's Mascle-sceptre type but it has not been found on any other continental coin. The third ornament is a liver-shaped or purse-shaped object which also occurs on the Two-figure type, on the Flag coins, on some of the Eustace Knight pennies and on the RODBERTUS 'Horseman' pennies as well as on some Flemish petits-deniers.[11] Dividing the eight devices on the Two-figure penny are eight billets, each with three nail-holes. On the new coin these billets are more rounded at the corners; there seems to be a small depression visible on one billet, but the state of wear precludes a positive statement that all the billets originally had nail holes. It is likely that the missing ornaments on the cut-half penny reproduced and followed the same sequence as the remaining devices depicted on Stephen's Two-figure penny, i.e., an uncertain device (doubtfully, a lock or shackle), a voided quatrefoil, a horseshoe-shaped device, a serpentine S-shaped object and a square cross with a central pellet. In view of the fact that the ornamentation on this new Standard type appears to be a relatively crude reproduction of the ornamentation on the Two-figure coin it is suggested that the latter is likely to have predated the former.

Perhaps the most striking feature of the coin is the standard on the obverse. If it is compared with the banner on Stephen's Flag pennies (Fig. 3) it will be seen that they are very similar in form; on both coins the shaft of the standard is surmounted by a spearhead below which is a triangular wedge, something which could easily be missed if examining the Flag pennies on their own. The banner on both types is triple-tailed and slopes away at the same angle. What does seem clear is that this is not just a knight's lance pennon as the triangular wedge would preclude its use as a weapon. It is a gonfalon or battle-banner and its spearhead announces its military significance. In illustrations of the mosaics in the *triclinium* of the Lateran palace, made prior to their restoration, St Peter is depicted investing Pope Leo III with a pallium and Charlemagne with a triple-tailed banner having a protruberance below the spear-head, similar to that on the standard on Stephen's pennies.[12] What is the significance of this gonfalon?

Like the Eustace Knight coins, the Flag pennies can be divided into two series: a 16–18 grains issue, which from the reverse ornamentation and lettering seem to be linked with petits-deniers of the mint of St Omer in the Pas-de-Calais[13] (though this does not constitute firm evidence that the pennies were also minted there) and an 18–20 grains issue with different ornamentation and inscriptions, probably from a second uncertain mint. The Flag type pennies have the uniform inscription STIEFNE R, except for three coins (two of which may be imitative pieces), and perhaps one can presume them to have been minted concurrently with the normal English Cross Moline coins, *BMC* i, with the same obverse inscription that Mr Seaman has tentatively dated to approximately 1145–47.[14] If this was the case they can have had no possible connection with the Battle of the Standard in 1138 as was suggested by A. E. Packe.[15] The years 1145–47 were precisely the period in which the Second Crusade was being prepared. The great Crusader fortress of Edessa had fallen to

[10] L. Deschamps, 'Étude sur les Monnaies de Boulogne', 281. Deschamps also took the view that the shield on the Two-figure coin represented the arms of the counts of Boulogne, even though at a later date there were three *torteaux* on the Boulogne arms, not six, but he points out that at this period the rules of heraldry were imprecise.

[11] Caron, 655 and pl. XXVI, 17.

[12] P. E. Schramm, *Die deutschen Kaiser und Könige in Bilden ihrer Zeit* (1928), I, 27–9 and pl. 4a–b; and the colour wash by Grimaldi in the Vatican Library (Codex Barberini, *lat.* 2062, fo. 61). Also, Le Blanc, *Dissertation historique sur quelques Monnaies de Charlemagne . . .* (Amsterdam 1692), p. 19. The protuberance below the spearhead has the appearance of a silken tassel.

[13] P. J. Seaby, 'Some Coins of Stephen and Eustace and related Issues of Western Flanders', *Coinage in the Low Countries (800–1500)*, edited by N. J. Mayhew, BAR International Series 54 (1979), 49–53.

[14] R. J. Seaman, 'A Re-examination of Some Hoards containing Coins of Stephen', *BNJ* 48 (1978), 58–72.

[15] A. E. Packe, 'The Coins of Stephen', *NC* 3rd ser. 16 (1896), 68; and others.

Zengi the Turk at Christmas 1144, and, following the preaching and promptings of Bernard of Clairvaux, two Crusader armies, one led by the German emperor Conrad III and the other by Louis VII of France, set out across Europe for the East in the spring of 1147. These were followed by an Anglo-Flemish armada of some 164 vessels under the command of Christian of Ghistelle which left the Channel ports for the Holy Land via Portugal in June. Does the standard represent a papal gonfalon, possibly one of a number sent by Pope Eugenius to leaders or potential leaders of the Crusader armies? Stephen did not join the crusade (his position in England was too insecure), but some of his earls and barons did go and they may have taken a papal battle-standard with them.

The presentation of gonfalons blessed by the pope, for military campaigns which had papal approval, had precedents going back for at least a century.[16] Pope Benedict IX had presented a banner to Emperor Henry III as early as 1044, and in 1059 William of Montreuil, described by Orderic Vitalis as 'the Good Norman', received a banner from Nicholas II. Pope Alexander II presented banners, not only to William of Normandy for the invasion of England,[17] but also to Erembald, captain of the army of Milan, and to Count Roger of Sicily. The armies fighting against Emperor Henry IV in 1086 and against the pirates of El Mahdiyya in 1087 both fought under papal banners, and it is known that Bishop Adhemar of Le Puy, the papal legate, was given a banner blessed by the pope to take on the First Crusade. It appears that Conrad III, and possibly Louis VII, received a gonfalon to take on the Second Crusade.

Stephen's father-in-law, Count Eustace III of Boulogne, was the senior of the three brothers of the House of Boulogne who took such a major part in the First Crusade, though he did not intend to remain in the East. Godfrey de Bouillon, the middle brother, led the army in the Holy Land and after the successful assault on Jerusalem was to be acclaimed 'Defender of the Holy Sepulchre'. He sent back to Boulogne the crown that he had been offered, and which he declined, to be placed at the feet of the revered Nôtre-Dâme de Boulogne together with other relics. It is possible, though we have no evidence for it, that Count Eustace could have returned to Boulogne with the banner which had led the assault on Jerusalem. The youngest of the Boulogne brothers, Baldwin, became the first Christian king of Jerusalem on Godfrey's premature death. Eustace (IV), Stephen's elder son, succeeded to the county of Boulogne on coming of age in 1147, but it is not known whether he took an active part in the Second Crusade.

King Stephen's banner does not appear on any of his four substantive English coinages nor on any of the local English types, which, with one exception, have a normal fleured sceptre. The exception is a variant of the Canterbury mint on which the sceptre is replaced by a spiky mace, possibly a distinguishing mark of William of Ypres who seems to have exercised comital powers in Kent even though he did not use the title of earl.[18] It is suggested, though with no degree of certainty, that a papal standard presented to Stephen at the time of the Second Crusade, by virtue of his rank and his connection with the House of Boulogne, is the most likely explanation of the standard on the Flag type and on this new coin.

The ornamentation on this coin associates it with other types of Stephen's 'ornamented' coinages. This series did not adhere to the strict rules of English minting practice which required the names of the moneyer and mint on every coin, rules which were observed even on the baronial issues. The evidence of hoards hardly advances the case for assuming

[16] D. L. Galbreath, *Papal Heraldry* (1972), pp. 2 and 114.

[17] In one of the episodes depicted on the Bayeux Tapestry Duke William is shown holding a flag with four streamers blazoned with a cross and four roundels as he receives news of the approach of Harold's army. This may well represent the gonfalon sent by Pope Alexander, but the banner is rendered more elaborately when it is carried by Count Eustace of Boulogne in the battle scene in which William raises his helmet in order to be recognized and Eustace points to him, shouting 'HIC EST WILLELMVS DVX'. Eustace commanded the wing of Boulonnais, Flemish and French knights (other than Norman and Breton) at the Battle of Hastings, and his reward was the great accumulation of manors, chiefly in Essex and Hertfordshire, which became known as the Honor of Boulogne. Did he retain the papal banner as a battle trophy?

[18] R. H. C. Davis, *King Stephen* (1967), p. 143.

the series to be of English manufacture. If the shadowy and poorly recorded seventeenth-century Cattal hoard is excepted, the only Stephen hoard containing an 'ornamented' coin is the Winterslow (Wilts.) hoard with a single Flag penny. Numerically this is hardly more significant than the single Boulogne denier in the Lark Hill 'Tealby' hoard deposited some two decades later. The absence of the series in the five north midland Stephen hoards (South Kyme, Nottingham, Ashby Woulds, Sheldon and Prestwich) is particularly significant. Furthermore, there is an unexplained hiatus, during the period 1125–53, in the series of Boulogne deniers struck to the French standard, that is, during the countships of Stephen and Matilda and of their son Eustace, arguably the most powerful of all the Boulogne counts to that time. The Boulogne denier series recommences with the coins of William, Stephen's surviving son. Apart from the Boulogne shield which occurs on several of the 'ornamented' types and on other coins of the Pas-de-Calais region, some of the Stephen Flag pennies and some of the Eustace Knight coins exhibit the doubled s and *omega* (or inverted M) which appear as doubled s and M on petits-deniers of St Omer. A further pointer to probable continental manufacture is the mascle-topped sceptre used on Mack 218 (*BMC* 260), a coin closely linked to the Rodbertus 'Horseman' pennies, Mack 228 (*BMC* 271). This has no parallel in English regal iconography but appears to be derived from the new style French sceptre first used by Louis VII (1137–80). One major problem has still to be finally resolved, the elucidation of the inscriptions 'EBORACI TDEFL' and 'EBORACI EDTS' on the Knight pennies of Eustace which in the past have led to the understandable attribution to the city of York.

The writer takes the view that, whilst it would have been possible for coins of English weight and fineness to have been issued at Continental mints within Stephen's sphere of influence, it is highly unlikely that coinages of the complexity and variety of the 'ornamented' issues, which do not bear the names of both mint and moneyer, would have been manufactured in England. A comprehensive review of the ten types of the 'ornamented' coinages is in preparation, and the writer would be grateful for details of any specimens omitted from the listing published by Commander Mack in 1966.

SHORT CROSS STERLINGS FROM THE ROTENFELS HOARD

G. P. GITTOES AND N. J. MAYHEW

THE Rotenfels hoard of 1936 provided much of the data used by Friedrich Wielandt in his 'Beiträge zur oberrheinischen Münz- und Geldgeschichte'.[1] The general characteristics of the find are apparent from Wielandt's summary totals.[2]

	Total	Percentage	Average weight g
Strassburg types	547	39.5	0.49
Heller	167	12.1	0.50
Cologne	551	39.8	1.34
Sterlings	112	8.4	1.30
Speyer type	6	0.2	0.49

It is the purpose of this article to re-examine the sterling element of the hoard to improve on certain points of detailed classification. This will provide additional chronological data perhaps of some importance for the dating of certain German issues from Cologne, Münster and Lippe and for our understanding of the Rotenfels find as a whole. It is also our purpose to consider the implications of such a large hoard of sterlings found outside those parts of Germany most usually associated with the circulation and imitation of sterling.

The structure of the English element in the hoard may be seen from Tables I–III which deal with the Mint/Class/Moneyer pattern of the sterlings. These tables may be compared with those prepared by Dumas and Brand in their paper on the Gisors hoard, which usefully also calculates the corresponding figures from a range of other hoards containing Short Cross from Britain and the Continent.[3] The latest English coins in it may be closely dated 1218/19. The Rotenfels sterlings are thus earlier than most of the finds of English Short Cross pennies which have been adequately reported. The Clifton find of 1947 is closest in date.[4] Although the Rotenfels sterlings may be firmly dated on their own, internal evidence, comparison with other Short Cross hoards tabulated by Dumas and Brand is instructive since it can highlight any unusual characteristics. Thus the scanty numbers of Class VII coins confirm the early date. The dominance of the London mint, in a ratio of 2.7 : 1 with Canterbury coins, is only what we would expect in a group of this date since Canterbury output rose markedly only after the *terminus post quem* of these sterlings.

Table II, showing the coins of the four London moneyers Abel, Ilger, Rauf and Walter is of some interest. Ilger is the dominant moneyer, as is usual; Rauf's output is perhaps slightly less fully represented than we might have expected. As a group, these moneyers accounted for thirty-four coins, classes Vb–VIIa, or 31.7 per cent of the English Short Cross sterlings. This is a much greater share than they enjoy in the later hoards, (Eccles 27 per cent, France

[1] F. Wielandt, 'Beiträge zur oberrheinischen Münz- und Geldgeschichte: Die Münzfunde von Rotenfels, Oos und Illingen.' *Jahrbuch für Numismatik und Geldgeschichte* 2, (1950–1), 68–125.

[2] Wielandt, p. 97. These totals do not always tally exactly with the subtotals in the main body of Wielandt's article but they are accurate enough to convey the overall shape of the find. Examination of the sterling element in the hoard, now preserved in the Badisches Landesmuseum at Karlsruhe, suggests that the overall totals may be more accurate than the subtotals though Wielandt's sterling total 112 omits the Münster coin. The authors would like to

express their warmest thanks to Dr Peter-Hugo Martin for providing casts of all the sterlings from the hoard. It is hoped that this re-examination of the Rotenfels sterlings will be seen not so much as a criticism of Dr Wielandt's work but as a celebration of it. Without his original work on the find the present essay would not have been possible.

[3] F. Dumas and J. D. Brand, 'The British Coins in the Gisors (1970) Hoard', *BNJ* 40 (1971), 22–43. We are also grateful to Mr Brand for his comments on an earlier draft of this paper.

[4] P. A. G. Carson, 'The Clifton (Lancashire) Find of Short Cross Pennies', *NC* 6th ser. 7 (1947), 30–2.

TABLE I
Sterlings from Rotenfels by Mints and Classes

	I	II	III	IV	V	VI	VII	Total	% of 107
London	4	1	1	11	16	22	2	57	53.3
Bury						2	1	3	2.8
Canterbury				4	7	6	4	21	19.6
Durham						1		1	
Exeter	1							1	
Ipswich					1			1	
Lincoln	5				2			7	6.5
Northampton	1				1			2	
Norwich/Northampton	1							1	
Winchester	3				4			7	6.5
York	2			3	1			6	5.6
Totals	17	1	1	18	32	31	7	107	
Irregular								2	
Lippe								1	
Münster								1	
Scotland								2	
								113	

TABLE II
Four London Moneyers

	No. of coins	
Abel	7	
Ilger	12	
Rauf	6	
Walter	9	
	34	= 31.7% of 107

21 per cent, Colchester 18 per cent, Gisors 18 per cent, Ribe I 16 per cent, Ribe II 12 per cent, Wrexham 11 per cent), but rather less than their 41 per cent share of the Clifton hoard, with which the Rotenfels sterlings must be roughly contemporary. Indeed the Clifton coin by the London moneyer Terri suggests that Rotenfels may indeed have been the earlier of the two sterling parcels. How, then, can the 31.7 per cent representation of the quartet of London Class VI moneyers be reconciled with a date *earlier* than that of the Clifton find which scored 41 per cent?

The explanation for this anomaly lies in the unusually high proportion of early Short Cross coins in Rotenfels. Lawrence Classes I to IV account for 34.6 per cent of the English sterlings found at Rotenfels. This early bias not only explains the unexpectedly low proportion of coins from the London moneyers Abel, Ilger, Rauf and Walter, but also points up the really distinctive feature of the Rotenfels group: far more coins of Class I–IV occur than would have been expected in a typical sample of the currency collected in England

TABLE III
Proportions of Classes

	No. of coins	% of 107
I–IV	37	34.6
V	32	29.9
VI	31	29.0
VII	7	6.5

c.1220. The foreign wars and diplomacy of Richard and John, and John's recoinage of lightweight coin in 1205, together reduced what must initially have been a substantial issue between 1180 and 1204 to a very small proportion of the coin in use in England in the first half of the thirteenth century. Dumas and Brand show that Classes I–IV never accounted for more than 12 per cent of the other known finds.

It thus appears that hoards of sterling actually accumulated abroad may be distinguished from parcels recently exported from England by their higher proportion of the earlier classes. Sterling on the Continent would not have been subjected to the 1205 English recoinage while the very large royal expenditure which removed the early types from England would have increased the numbers of those types on the European mainland. We may therefore conclude that the Rotenfels sterlings were probably not a group recently exported to Germany from England c.1220 but put together on the Continent from sterling already there.

Further analysis below will attempt to refine the picture still further, identifying different patterns of use in different parts of Germany. A necessary preliminary task, however, is to date the Rotenfels find, taking into account the chronological information provided by the sterlings.

The latest English sterlings cannot be dated much after 1218 or 1219. There are seven coins of Class VII, which was introduced in December 1217. Willelm, the moneyer of the Bury St Edmunds coin in the find, was replaced early in 1218.[5] The other moneyers represented in Class VII at Rotenfels, Ilger and Rauf at London and Henri, Ioan, Roger and Simon at Canterbury all figure in both the useful lists of moneyers extant for 1217–18 and 1221–22.[6] However, all seven coins exhibit the early forms of lettering, especially the small E and C and the pointed and bar-topped A noted by Stewart as early features.[7]

The later forms of Class VII are plentiful enough, so the date of the English sterling element is relatively firmly fixed. It must have been roughly contemporary with the Clifton hoard, which is probably slightly later since it contained a coin by Terri at London who figures in the 1221–22 moneyer list but not in that of 1217–18.

The two Scottish pennies are both of the Short Cross issue in the name of William the Lion with the Hue Walter reverse without specification of mint. The details are as follows:

1. facing left, 6 point stars, Burns[8] Class I, Burns, PL. V, 47, same obv. die
2. facing left, 5 point stars, Burns Class III, Lockett[9] photos I, 39, same obv. die

and the legends are given in full in Appendix 1.

In the present state of our knowledge of the chronology of the Scottish Short Cross series, these two coins do not significantly influence our dating of the find.

The hoard was dated by Wielandt to the 1240s, but evidence of the sterlings tells us that the latest English coins can be closely dated c.1219. Similarly the latest Cologne pfennigs, of Archbishop Heinrich I (1225–38), reward closer examination. They are all of Hävernick 647, except for five pfennigs and two halfpennies of an unpublished but closely corresponding type. There are thus 134 examples of Hävernick 647 and none of Heinrich I's other substantive type, Hävernick 642. This argues strongly that Heinrich I's first type was Hävernick 647, and that it can be assigned to the first part of Heinrich's archiepiscopacy.[10] The Cologne coins therefore suggest a date of deposit in the early 1230s. The chronology

[5] Ian Stewart, 'English Coinage in the Later Middle Years of John and the Minority of Henry III' Part One, *BNJ* 49 (1979), 33–5.

[6] The interesting references to the moneyers in the king's and lord treasurer's remembrancer's memoranda rolls were first brought to the notice of numismatists by J. D. Brand, 'Some Short Cross Questions', *BNJ* 33 (1964), 65.

[7] Stewart, pp. 35–36.

[8] Edward Burns, *The Coinage of Scotland* (Edinburgh, 1887).

[9] A complete set of photographs of the Lockett collection is kept at the British Museum. The coin in question is on the first pair of plates (obv. and rev.) in the Scottish Series.

[10] Walter Hävernick, *Die Münzen von Köln* (1935). When Hävernick wrote, without the Rotenfels evidence, he dated both types 1226–38, noting that there were then no grounds for placing either issue first.

of the Strassburg and Heller content is more uncertain. Wielandt dated it 1230–50, and settled on a date of deposit in the 1240s. He was aware that Rotenfels was earlier than Oos because of the types of Strassburger pfennigs in the two hoards, and this is confirmed by a comparison of sterlings in Oos and Rotenfels.[11] Only new finds will show whether the Strassburg and Heller coins in Rotenfels are compatible with a date in the 1230s as the Cologne and sterling element seems to suggest. Although the sterlings and Cologne pfennigs can be firmly dated earlier than Wielandt supposed, it would not be safe to assume that the Strassburg and Heller element was necessarily of similar date. Once a currency moves out of its normal milieu the date of the latest issues is no longer a reliable guide to the probable date of concealment.

Questions about the use of sterling in Germany arise from the fact that Rotenfels is one of the largest hoards of Short Cross sterlings found in Germany but it lies far to the south of the principal area of sterling circulation and imitations which centred on Westphalia. The Hillschied find poses the same problem. The resolution of this paradox requires first that we define carefully what we mean by 'circulate'. This term will here only be used to indicate genuine integration with the existing local currency permitting regular and easy use at all levels of society. It will be argued that this did occur in Westphalia and those parts of northern Germany operating a heavy, Cologne weight standard. By contrast where a light standard prevailed, sterling was more likely to be used more as bullion. In the south it occurs in fewer finds, almost always in the company of Cologne pfennigs, but when it does occur it is likely to be in larger conglomerations, as a store of wealth perhaps more than as a means of exchange.

The supporting evidence for this theory calls for an analysis which will distinguish between areas of heavy and light standards, and between north and south, and which is capable of incorporating both documentary and find evidence.

The find evidence from south Germany and beyond is easily summarised. Apart from the large sterling content in Rotenfels and Hillschied, smaller quantities occurred in Beratshausen, Ladenburg, Oos and Obermörlen, always in the company of Cologne pfennigs. Beyond Germany to the south, the Ostrovo 1898 find exhibits the same phenomenon, of Short Cross and Cologne pennies together.[12] Finds of Short Cross further north in Germany are more plentiful but usually contain only a handful of English coins. It would seem that the English coins were fully integrated into the local currency which operated on the heavy Cologne weight standard. This common standard of weight and fineness is the principal reason why in the early thirteenth century sterling did circulate in northern Germany, and was indeed extensively imitated there, while in the Low Countries, where English trading contacts were much greater, Short Cross sterling is almost never found. A brief examination of the find and documentary evidence for Short Cross sterling in the Low Countries points up this contrast with Germany and serves to emphasize the overriding importance of the weight standard of the host country.

Only one Short Cross penny has been recorded found in the Netherlands: Abel on Lunde found on Terschelling beach. Moreover, 'the close searching of this beach by a local collector resulted in several more unusual coins (probably washed ashore)' being found.[13] The only Short Cross hoard from the Low Countries seems to have been a second find from Beveren, of similar composition to the first find but with the addition of sterlings.[14] The imitation

[11] Oos contained a London coin of Class VII by Ricard, who was appointed moneyer in 1230. Summary details of and the references to other German finds containing English Short Cross are given in the list of finds, Appendix 2. Fuller details of finds from part of Westphalia are available in Peter Ilisch, *Münzfunde und Geldumlauf in Westfalen in Mittelalter und Neuzeit* (Münster, 1980).

[12] For the Ostrovo hoard, and a summary of other finds including sterling from Yugoslavia, Roumania, Hungary and Greece, see N. J. Mayhew and B. H. I. H. Stewart, 'The Sterling Element in the 1898 Ostrovo Hoard', *NC* 144 (1984), 173–9.

[13] Letter from Prof. Enno van Gelder and Drs Jacobi of the Hague.

[14] See A. de Witte in 'Les relations monétaires entre la Flandre et l'Angleterre jusqu'au XVII^{e} siècle' *Revue de Droit international* (1894), 75–94.

of the Short Cross sterling type on the so-called 'Kopfchen' from Holland suggests, however, that the sterling coinage was not unknown, as does a Utrecht rent of 1208 cited in sterling.[15] The early use of the sterling reverse with a profile head on the obverse of the small Holland deniers may perhaps be explained partly in terms of the contacts between Floris III and Scotland.[16] In Artois early documentary evidence for sterling seems particularly plentiful, beginning as early as 1177 and becoming more frequent in the first half of the thirteenth century.[17] Because of its reliable fineness sterling may sometimes have been cited as a measure of value, rather than actually used, and some of the Artois documentary evidence suggests this particularly strongly, e.g. the earliest reference, when the payment originally stipulated was sixty sous de Chalon, but 'si moneta deteriorabitur vel forte meliorabitur, 20 solidus sterlingorum ecclesia Saint-Vaast nobis persolvet.' The men of the Low Countries were clearly familiar with sterling from an early date, but the absence of finds argues strongly that it did not *circulate* till the second half of the thirteenth century. Before then sterling was perhaps reserved to international merchants, aristocrats and the church. For the rest of the population in the first half of the thirteenth century sterling had to be recoined in those areas where a coinage on a light standard operated, but was tolerated in those parts of Germany where it circulated alongside the Cologne pfennig.

The documentary evidence for Germany suggests that English Short Cross sterling was not so very plentiful. Hatz has noted that in Schleswig-Holstein the documents, and the finds, indicate that the role of sterling begins only after about 1250.[18] The first Danish documentary evidence for sterling is dated 1251, almost exactly contemporary with the Ribe hoard.[19] Similarly Kennepohl dated the influx of English sterling into East Friesland to the middle of the thirteenth century.[20] However, it is Hävernick's invaluable study of the Cologne pfennig which provides most information on documentary evidence for sterling.[21] Thus Hävernick cites a payment from Cologne to Rome of 500 *marcis bonorum novorum et legalum sterlingorum* in 1214, but notes that this early use of sterling is almost without parallel: the next example known to him from the lower Rhine is dated 1268, from which date sterling references become more common. Similarly the Utrecht rent of 1208 mentioned above is over fifty years earlier than the next sterling reference for the area. The same picture of the dominance of the Cologne pfennig in the first half of the century, and the gradual appearance of other currencies including sterling after 1250 emerges from the archives of monasteries such as Kaiserwerth, Heisterbach and Altenberg. Gelderland and Zutphen provided Hävernick with two sterling references, 1238 and 1248, amongst a mass of Cologne pfennig evidence before 1250, and an increasing number of sterling references thereafter. Quix's *Codex Diplomaticus Aquensis* provides a similar picture for Aachen. Most interestingly Hävernick found no documentary evidence for English sterling from Westphalia. Cologne pfennigs are found in the Westphalian documents, though only rarely in northern Westphalia. Hävernick notes that the Cologne pfennig could enter the circulation of an area on a heavy coinage standard and circulate equally with the local currency without needing specific mention in the documents and the same reasoning could apply to the sterling. This total integration with the host currency may thus explain the scarcity of documentary references to sterling and the widespread but scanty representation of English

[15] W. Hävernick, *Der Kölner Pfennig im 12 und 13 Jahrhundert* (Beiheft 18, zur Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte. Stuttgart, 1930), p. 108.

[16] Ian Stewart, 'Imitation in later medieval coinage: the influence of Scottish types abroad' in *Studies in Numismatic Method Presented to Philip Grierson*, edited by C. N. L. Brooke and others (Cambridge, 1983), pp. 303–25.

[17] C. Richebé, *Les monnaies feodales d'Artois* (1963), pp. 121–22.

[18] G. Hatz, 'Finds of English medieval coins in Schleswig-Holstein' in *Studies in Numismatic Method Presented to Philip Grierson*, edited by C. N. L. Brooke and others (Cambridge, 1983), pp. 205–24.

[19] *NNÅ* 1955, p. 11.

[20] *HBN* 4, (1950), p. 22.

[21] W. Hävernick, *Der Kölner Pfennig*, p. 132 (citing Th. J. Lacomblet, *Urkundenbuch für die Geschichte des Niederrheins* I 1840, II 1846, III 1853), and following p. refs. 108, 133–4, 138–9 (citing L. W. Sloet, *Oorkondenboek d. Grafschappen van Gelre en Zutfen*, 1872/6), 140–1, 205 (Münster sterlings may of course appear in the documents merely as Münster pfennings), 209, 210.

sterling in north German finds. Nevertheless, it is clear from both finds and documentary evidence that compared with Long Cross sterlings, Short Cross was not as plentiful. Why then was it so widely imitated?

Ian Stewart has usefully distinguished between various grades of imitation ranging from abject copies to independent yet derivative types.[22] Westphalia did produce some copies, but it is the extensive range of adaptations/derivatives, especially from Münster in the 1220s and from Hamm in the 1240s, which are the distinctive feature of its monetary history at this time. If the English sterling presence was as modest as the existing finds and documents seem to suggest, why was sterling so extensively imitated? Clearly the English coin was well known and liked; its weight and fineness were reliable. But is it possible that it was also imitated in preference to the imitation of Cologne pfennigs because the two coins habitually circulated together but the legal and political implications of copying the coinage of the archbishop were more worrying than those of copying sterling?[23]

Rotenfels contains only four German sterlings, three copies attempting English legends and types, and one sterling of Münster with the reverse Henri on Lund. Münster imitations of this type have already been dated early, c.1210, because of the correspondence of the obverse type with that used on the Münster Dom denars.[24] A date at any rate before 1220 is confirmed by the Rotenfels provenance, which is incidentally the only hoard provenance known for coins of this type, using the obverse of the type used on the Dom denar with a Henri on Lund reverse. Of the three copies, one is an instantly recognisable Lippe type with a rose in the crown already identified by Wielandt. The other two, however, have not been recognised as imitations hitherto: one is in fact a very good copy, reading +IOhANONCAN while the other reads +ROBERDONCAI. Assuming that all these copies may be dated with the English parcel, i.e. before 1220, this provides interesting evidence for their early date. Such copies are known in very small numbers in one or two relatively early hoards, e.g. Eccles, Hesseln (both c.1230) and Colchester c.1237, but they are more plentiful in later hoards such as Ribe, Naxos and Hildesheim. Thus a firm early date for these types is important.

APPENDIX 1

The Coins

All Cs and Es are round and closed unless otherwise indicated. Coins illustrated by Wielandt are marked with an asterisk.

London				*Wielandt Number*
Ia	Eimer	LVN·	Es and Cs square, M round	123*
Ib	Pieres	LVND		128
Ib	Pieres·M·	LVN		129
Ib	Raul	LVND		134
IIa	Raul	LVNDEN		133*
IIa	Raul	LVN[ ]		130
IVa	Ricard	LVND	ND ligatured	136*
IVa	Stivene	LVN	C used in place of E on reverse	137

[22] Ian Stewart, 'Imitation in later medieval coinage', pp. 304–5.

[23] The exploration of this possibility would call for a major study of Cologne imitations. It should be stressed that it is only offered here tentatively, and that the idea is restricted to sterling adaptations and derivatives. The *copying* of sterling may have been intended for the Flemish or English market. We even know of Cologne pfennigs overstruck with copied 'English' Westphalian types. See Ian Stewart, *Lagom, Festschrift für Peter Berghaus zum 60 Geburtstag am 20 November 1979* (Münster, 1981), pp. 205–10.

[24] P. Berghaus, *Westfälische Münzgeschichte des Mittelalters* (1974), p. 11.

London				*Wielandt Number*
IVa	Stivene	LVN	VN ligatured	137
IVa	Stivene	LVN		137
IVb	Uncertain	LVND		146
IVb	Ricard	LVN		135*
IVb	Willelm	LVN		141 or 142
IVb	Willelm	LVN		141 or 142
IVb	Willelm	LVN	VN ligatured	143*
IVc	Fulke	LVND		124*
IVc	Willelm	LV		141
Va	Willelm fragment	[ ]LN·ON·LVN	Reversed S on obv., no pellets in curls	141 or 142
Vbi	Beneit	LVND		122
Vbi	Beneit	[ ]ND		122
Vbii	Ilger	LVN[ ]		126
Vbii	Willelm·L·	LV		144
Vbiii	Adam	LVNDE		121
Vbiii	Willelm·T·	LV		145
Vc	Abel	LVNDE	ND ligatured	120
Vc	Abel	LVNDE	ND ligatured	120
Vc	Ilger	LVNDE		127*
Vc	Ilger	LVN	/REX	125
Vc	Ilger	LVND	ND ligatured	126
Vc	Rauf	LVNDE	ND ligatured	131
Vc	Walter	LV		138 or 139
Vc or VIa1	Walter	LV		138 or 139
Vc or VIa1	Walter	LV		138 or 139
VIa1	Abel	LVN[ ]		118?
VIa1?	Abel	LVNDE	ND ligatured	119?
VIa1	Rauf	LVND[ ]	ND ligatured	130
VIa1	Walter	LV	/REX	138 or 139
VIa1	Walter	LV		138 or 139
VIa1	Walter	LV		138 or 139
VIa1	Walter	LV		138 or 139
VIa1?	Ilger	LVND	ND ligatured obv. cast faulty	126
VIa1?	Walter	LVN	VN ligatured	140
VIa2	Rauf	LVND	ND ligatured	130
VIa2	Walter	LV		138 or 139
VIb1	Abel	LVNDE	ND ligatured	120
VIb1	Ilger	LVNDE		127
VIb1	Ilger	LVN[ ]		126
VIb1	Rauf	LVNDE	ND ligatured	131
VIb1 or 2	Rauf	LVNDEN	ND ligatured	132?
VIc1	Ilger	LVNDE		127
VIc2	Ilger	LVNDE	Turned over in the die	127?
VIc2	Ilger	LVNDE		127
VIc2	Abel	LVNDE		120
VIc2	Abel	[ ]NDE		120
VIc3/2 mule	Ilger	LVNDE		127
VIIa	Ilger	LVND		126
VIIa	Rauf	LVNDE	Rev. with grained inner circle	131
Bury				
VIc2	Rauf	SANTE:		98
VIc3	Rauf[ ]	SANTAD		110
VIIa	Willelm	[ ]ANT	Same obv. die as a coin of Rauf in BM, see *BNJ* 49 (1979), Pl.V, 91	107

				Wielandt Number
Canterbury				
IVa	Roberd	CAN		100
IVb	Goldwine	C		85
IVb	Ioan	CANTI		93
IVb	Menir (sic)	CANT		96 (illus.no.95)
Vbi	Goldwine (GOLD·WINE)	(·ONC)		86
Vbi or ii	Hue	CANTE		90
Vbii	Hue	CANTE		90
Vbii	Hue	CANTE		90
Vbii	Simon	CANT		105
Vc	Arnaud	CA		84
Vc	Iohan·M·	CAN		95
VIb2	Hiun	CANTE	No stop on obverse	89
VIc2/3 mule	Roger	CANTE		101
VIc3	Henri	[ ]ANTE	Turned in die	88
VIc? Samuel	Samuel	CAN	Obverse cast faulty	102
VIc3	Simon	CANTE		104
VIc3	Walter	CAN		106
VIIa	Henri	CANT		87
VIIa	Ioan	CANT		92
VIIa	Roger	CANT		97?
VIIa	Simon	CANT		103
Durham				
VIa2	Pieres	DVR	Dies = Allen Du 615/ du 612 (new combination)	108
Exeter				
Ib	Roger	EXEC		109
Ipswich				
Vbii	Alisandre	G		111
Lincoln				
Ib	Edmund	NICO		113
Ib	Lefwine	NICO		115
Ib	Lefwine	NICO		115
Ib	Willelm	NICO		117
Ic	Willelm	NICO		117
Vbii	Hue	NICOLE		114
Vbiii	Andreu	NIC		112
Northampton				
Ib late	Walter	NOR		150*
Vbii	Roberd	NOR		149
Norwich or more probably Northampton				
Ib	[Will]elm	N		148?
Winchester				
Ib	Gocelm	W[ ]		152
Ib	Rodbert	WIN		156
Ib late	Gocelm	WINC		152
Vbi	Iohan	WINC		153
Vbii	Adam	WINC		151
Vbii	Lukas	WIN		154
Vbii	Miles	WINC		155

				Wielandt Number
York				
Ib	Hugo	EVERW		160
Ib late	Turkil	EVER		162*
IIIa	Hue	E[ ]		91
IVa	Everard	EI		159?
IVb	Nicole	(C for E)EVE		161
Va or Va/b mule	[D]avi	[ ]E[ ]		157 or 158

Scotland

Short Cross in the name of William the Lion

Burns Class			
I	+LERA|VILLAME	first A unbarred	Burns Pl.V,47. Same obv. die
	+hVEWALTER:OI		6 point stars
III	+LERE|WILA·		Locket photos I,39 Same obv. die
	+hVEWALTER:		5 point stars

Lippe, probably Lemgo

hENRIC[ ]		With Lippe Rose composed of pellets in the crown
+LV[NDEC]IVITA		Illustrated by Wielandt Pl.VI,157)

Münster

Probably Herman II von Katzenellenbogen, 1174–1203 and Otto I von Oldenburg 1203–18

+SANCTUSTAS	initial cross pommée; final S reversed	Bust of St. Paul, small saltire pommée above each shoulder
+hENRI·ON·LVND	initial cross pommée	Illustrated by Wielandt Pl.VI,166

See B. Peus, 'Das Münzwesen der Bischöfe von Münster bis zum beginnenden 13jh' *Westfalia Sacra* 2, 1950, pp. 205–11 and P. Berghaus, op. cit.

Unattributed imitations

hENRICVSR/EX	+IOhAN·ON·CAN	Plate, No. 1
hENRICVSR/EX	+ROBERD·ON·CAI	Plate, No. 2

Unattributed imitations

APPENDIX 2

Finds of Short Cross Sterling in Germany

Beratshausen	*RN*[4] 18 (1914), 120; *Blätter für Munzfreunde* 13 (1913), 5435. No numbers, but only a sprinking of sterlings.
Bevern-Bokel	O. Meier, *Das Brakteatenfund von Bokel* (1932). One crude imitation Short Cross with several other Netherlands and Westphalian coins and a mass of Hohlpfennigs.

Brümmerloh	Berghaus, Werl report, *Centennial Publication of the ANS*, 122. Mentions one Short Cross from England, though this coin is not mentioned in *Blätter für Münzfreunde* (1922), 217–20, nor in Fundakten Hamburg. It is difficult to determine which of the sterlings in the Schellhass (Erbstein) Catalogue come from the hoard. At all events any English portion of this hoard could only have been tiny.
Bünstorf	*ZfN* 5 (1878), 197; *ZfN* 7 (1880), 382–419; *ZfN* 8 (1881), 197–8, Hatz, Grierson *Festschrift*, p. 217). One Short Cross class V out of nearly 700 pieces recovered.
Coesfeld	*HBN* 5 (1951), 84. Twenty-four Westphalian sterlings, no English.
Detmold	*HBN* 1 (1947), 39 n. 32. A number of English Short Cross – presumably the whole find.
Flensburg 1709	*NNÅ* (1936), 65. Two Henry III found in graves.
Flensburg 1892	*NNÅ* (1936), 65. Ten English Short Cross and two Irish (plus thirty-three English Long Cross, one Irish, one Scottish) amongst 825 coins seen from a find of about 10,000.
Friesoythe	*Oldenburger Jahrbuch* 41 (1937), 129–144. One Short Cross of Henry III out of just over 300 coins.
Gerbstedt	*Fundakten Hamburg.* Two Henry III Short Cross out of 470 coins.
Herford	*Blätter für Münzfreunde* 5 (1881), 794ff, Fundakten Hamburg. Two English Short Cross out of 984 coins seen.
Hesseln	*Z.f. vaterl.Gesch.Westf.* 29 (1871), 2 Abt., 236. Five English Short Cross out of 537 coins. Of the seven English pennies listed by Wippo two were certainly imitations.
Hildesheim	*HBN* 2 (1948), 16ff. Twenty-two English Short Cross and ten Long Cross with one Scottish Long Cross, out of 2,519 coins seen.
Hillschied	*Bonner Jahrbücher* 61 (1877), 170–1. 156 British Short Cross coins out of 330 seen.
Holzmülheim	*HBN* 14 (1960), 497. Three Short Cross from 684 seen.
Kreuznach	Fundakten Hamburg. At least one London Short Cross from an uncertain number seen.
Ladenburg	*Frankfurter Münzzeitung* (1905), 353ff; 1906, 388. Seven Short Cross from about 400 coins.
Lechtingen	*Mitt.d.Bayer.Num.Gesell.* 42 (1924), 52ff. No English coins.
Modesse II	*Braunschweiger Jb* (1956), 140–144. Perhaps the earliest find including sterlings: four out of 2,214.
Münster, Salzstrasse	*Dona Numismatica*, 202; Ilisch, *Münzfunde und Geldumlauf in Westfalen*, p. 83. One Winchester Short Cross out of 225 coins.
Ober-Mörlen	*Frankfurter Münzzeitung* (1930), 4 and 24. One London Short Cross out of nine coins seen.
Oos	*Jahrbuch für Numismatik und Geldgeschichte* 2 (1950–1), 98–118. About ten out of over 5,000 coins.
Piesdorf	Fundakten Hamburg. One Short Cross out of 466 seen.
Rendsburg	*NNÅ* (1936), 59–62. Unknown numbers of English Short and Long Cross and north German bracteates.
Rotenfels	*Jahrbuch für Numismatik und Geldgeschichte* 2 (1950–1), 69–97. 112 Short Cross out of 1,383 coins.
Schleusingen	*Die Mittelalterlichen Münzfunde in Thüringen* edited by W. Hävernick (Jena, 1955), pp. 241–262. Three English Short Cross out of 430.
Tornschau	Hatz no. 23 and *NNÅ* (1952), 43 = Hornskov. One (?) Short Cross in a group of over 200 later sterlings and five gros tournois.
Werl	*Centennial Publ. of ANS* 1958, pp. 89–123. Five English Short Cross out of 382 coins.
Wermelskirken	*Frankfurter Münzzeitung* (1914), 262 = Luffringhausen. At least one Short Cross, and a number of Long Cross out of 280 coins. A further 140 coins in separate pot contained no English sterlings.
South east Westphalia	H. Grote, *Münzstudien* 5, p. 166. Uncertain Long or Short Cross sterling find. Grote observed that a large number of sterlings may be Lippische imitations.

ENGLISH TOKENS, c.1200 TO 1425

MICHAEL MITCHINER AND ANNE SKINNER

THIS is the first of two papers concerned with an analysis of English Tokens made of tin, pewter or lead, issued between 1200 and 1672. Lead-pewter tokens of a cruder kind from the later period, 1675 to 1817,[1] have not been investigated in the present study. The investigation is introduced by a short analysis of the documentary evidence relating to tokens and a brief discussion of the role of tokens.

The main part of this paper comprises a multi-disciplinary analysis of the earlier classes of medieval English tokens. Although this is not intended to include a comprehensive catalogue of all known types of early medieval tokens – further varieties being known in the Museum of London and in private collections – the total of nearly four hundred distinct issues published here does include the majority of early varieties known to the authors. The issues catalogued here derive from published specimens plus tokens in the collection of one of the co-authors (MBM) and some belonging to Mr Nigel Mills. Almost five hundred tokens of recorded provenance have been examined in greater metrological detail and 234 of these have had their chemical compositions determined by the other co-author (AS) using the X-ray fluorescence technique.

Introduction

Base metal tokens have been used in western Europe for much of the time since this region came under the control of Rome nearly two millenia ago. Significant numbers of Roman leaden tesserae have been found both on the Continent and in England.[2] After this time there was a hiatus during the Anglo-Saxon and Norman periods in England, and during the same era on the Continent, following which base metal tokens once again assumed a prominent position in local economy during the decades around 1200.[3] Since then tokens, which were initially made of tin or pewter and subsequently more often leaden, have been used more or less continuously until the nineteenth century. The forms of the tokens have varied both from one time to another time and also from place to place. The various uses to which they have been put have also varied. During the medieval period pewter and leaden tokens probably served a common purpose throughout England, France and the Low Countries; but from the early sixteenth century onwards the form and usage of these base metal pieces in England was to evolve along very different lines from the functions of their Continental counterparts.

Although base metal tokens were frequently used as an alternative to small denomination official coinage, the medieval token should not really be conceived as a straight monetary substitute: at least not until after the Reformation so far as England is concerned. The medieval token is better thought of as being a 'chit-for-service', rather than as an item with a set monetary relationship to the sterling farthing; or to the Continental obol. The difference between these two concepts may seem insignificant when viewed from our own twentieth-century economic standpoint, but it does help to explain an important facet in the nature of our written evidence. Tokens did not compete with authorised coinage either in England,

[1] The extreme dates on the author's tokens. See also M. M. Archibald, 'A hoard of lead tokens from Evesham', *Coin Hoards* 5 (1979), 113–15; M. Dean, 'Lead tokens from the river Thames at Windsor and Wallingford', *NC* (1977), 137–47; M. Mitchiner, 'Lead tokens from the Isle of Dogs', *Coin Hoards* (in the press).

[2] Surveyed by M. Rostovtsew, 'Étude sur les plombs antiques', *RN* (1897–9), and by M. Mitchiner, 'Rome: imperial portrait tesserae from the city of Rome and imperial tax tokens from the province of Egypt', *NC* (1984), 91–114.

[3] The evidence for this date is both documentary and archaeological.

or on the Continent. English tokens were not forgeries of royal coin, nor were they related to the base metal foreign coin whose import – against the export of fine sterling silver – placed the Exchequer at an economic disadvantage. Leaden tokens played no part in either of the two major challenges to the official coinage (forgery and the circulation of inferior coin); so they escaped notice in the large body of official statutes concerned with currency regulation.[4] Tokens were simply irrelevant to legislation whose primary function was to safeguard the currency of the realm.

During the medieval period token-makers were not considered to be 'false moneyers' and the tokens, themselves, were not viewed as 'false coin'. In England it was only at the time of Elizabeth I and James I that the Crown began to condemn the unauthorised manufacture and use of farthing tokens in tin and lead by local merchants and other persons. The situation on the Continent was much the same and only in 1557 did the French Council of the Court of Money state that the canons of Macon would be condemned as false moneyers unless they ceased making the leaden tokens which they had been in the practice of producing for 'more than three or four hundred years'.[5]

The earliest mention of leaden tokens in an English parliamentary document appears in 1402 as an incidental comment in a Commons petition to Henry IV complaining of the shortage of halfpennies and farthings, which, it was said, caused people to use 'money of foreign lands, as halfpennies of Scotland, and others called galey-halpennys, and, in some parts, halfpennies divided (to the great destruction and waste of the said money), and *in some places tokens of lead*'.[6] The comparatively late date of this reference and the specific role of money substitute which it assigns to lead tokens should not be allowed to obscure the fact that tokens were in use well before 1400 and performed quite different functions. The French evidence, which it is legitimate to cite in view of the general similarity of French and English tokens down to the end of the fifteenth century, makes this quite plain. In summarising this documentary evidence it is logical to commence with the ecclesiastical sphere and progress to the secular. For, so far as one can judge, the principal user of the earliest tokens was the church, whence the fashion spread to an extensive secular following.

Many medieval ecclesiastical tokens, perhaps the major portion, had a function that was restricted to within the issuing body. At the chapter of Saint-Omer, as in many other places, the chaplains received tokens (*méreaux*) for attending church services. One of the early records from this chapter is dated 1428: it bears the comment that eligibility for receiving a token depended on arriving before the end of reading the martyrology and not leaving before the end of high mass.[7] These tokens distributed to clergy for attendances at various liturgical offices were redeemed at appropriate times, twice a year at Chalon,[8] for set sums of money. Fontenay has cited similar arrangements at Arras, Amiens, Autun, Macon, Meaux and Nevers;[9] but the most comprehensive series of actual tokens has been published by Forgeais[10] and comes from Paris, where they were used in the cathedral of Notre Dame and at other churches. Documentary evidence attests widespread use of this form of token from the fifteenth century and the tokens, themselves, considerably amplify the picture of general usage during the sixteenth century. But the custom began much earlier; about the time when tokens themselves came into widespread use during the years around 1200. The use of 'Nummi matutinales' at Tours can be dated back to 1216[11] and the manufacture

[4] See R. Ruding, *Annals of the coinage of Great Britain and its dependancies*, third edition (London, 1840) and also T. Snelling, *A view of the silver coin and coinage of England* (London, 1762); T. Snelling, *A view of the coins struck by English princes in France, counterfeit sterlings etc.* (London, 1769). For galley halfpence and their historical context, as viewed in the sixteenth century, see John Stow, *A survey of London*, 2 vols. (Oxford, 1971), I, 132–3 and 136–7.

[5] J. de Fontenay, *Manuel de l'amateur de jetons* (Paris, 1854), pp. 70–1.

[6] Ruding, I, 250.

[7] Fontenay, pp. 73 and 75.

[8] Fontenay, p. 69.

[9] pp. 69–95.

[10] A. Forgeais, *Collection de plombs historiés trouvés dans la Seine* (Paris, 1858–74): see 'Méreaux ecclésistiques', pp. 9–100 in 3° série, *Variétés numismatiques* (Paris, 1864).

[11] Fontenay, p. 70.

of tokens by the canons of Macon would seem to be attested from the same period according to the edict of 1557 cited above. In the middle of the thirteenth century Odon Rigault, archbishop of Rouen, noted with care during his pastoral visits which religious establishments in his suffragan dioceses were not using ecclesiastical tokens (*méreaux*).[12]

Although ecclesiastical tokens would appear, on the basis of documentary evidence, to have been in use from roughly 1200 to 1650 (and later in some places) the extant tokens bearing an inscription that defines such ecclesiastical usage virtually all date from the sixteenth century. Many of the pieces are actually dated and others bear comparable designs referring them to much the same period. Among the collection formed by Forgeais from diggings along the banks of the river Seine in Paris ecclesiastical tokens bearing dates range from 1566 to 1642 and a number of undated pieces have a slightly earlier style attributable to the early sixteenth century: none can be placed earlier than about 1500. Tokens published by Fontenay from other towns span much the same period. A small group of analogous early sixteenth-century ecclesiastical tokens have been found at various sites in London, but none of these have yet been published. What form did ecclesiastical tokens assume before specific inscriptions were introduced about 1500? They must probably be sought among the mass of non-personalised medieval tokens bearing designs of a stock nature.

Restrictions on the use of ecclesiastical tokens were applied from the second half of the sixteenth century, and their subsequent use declined progressively. The interdict placed on the Chapter of Macon in 1557 has already been noted. During the 1570s the same interdict was applied to Autun and minting machinery was confiscated.[13] In England the Reformation effectively put an end to ecclesiastical tokens. The subsequent use of 'Communion tokens' in many Reformed Churches – for instance the Wesminster Abbey record of 1571[14] – is not currently under consideration.

Despite the emphasis in the present context on tokens, it should be remembered that attendance at church services during the medieval period was not always remunerated in this manner. The published extract from the Obit book of Exeter cathedral for 1444 appears to show direct monetary payment for such attendances. As an example: 'At matins were present 14 vicars, to each 1d. Also 7 annuellars, and 6 secondaries, to each a halfpenny. Also 14 choristers, to each a farthing. Also four warders, to each a halfpenny, 2d. Total 2s 1d'.[15]

One quite distinctive class of ecclesiastical token that has not yet been mentioned is the series relating to the annual festival of the Boy Bishop, which was held at many towns both in England and on the Continent. Rigold[16] has studied the English scene where the Boy Bishop (Saint Nicholas Bishop) cult was widely attested from the period of Edward I onwards, particularly in East Anglia. Reeves[17] has also commented on the Boy Bishops of Salisbury and Gloucester. The French evidence was investigated in some detail by Rigollet[18] who also provided extensive documentary evidence that the Boy Bishop cult was practised in many French towns from the latter part of the thirteenth century onwards. In France, where the festivities of some towns tended to debauchery, it was also known as the Feast of Fools (*festum stultorum*), as the Feast of the Subdeacons and as the Feast of the Innocents. It was attested at Amiens from 1291[19], at Laon (Feast of the Innocents) from 1284 and also at Liege (1330: *Episcopus puerorum*), as well as at a number of other places. With the exception of a few late survivals, such as Peronne, the festival remained popular until the middle of the sixteenth century and after that time it declined quite rapidly. In England the festival was abolished during the Reformation, but transiently restored by Mary Tudor (1553–58). The use of leaden tokens by the Boy Bishop is not attested by documentary

[12] Fontenay, p. 83.
[13] Fontenay, p. 71.
[14] J. E. Smith, *A catalogue of Westminster Records* (London, 1900), p. 34.
[15] *English Historical Documents, IV: 1327–1485*, edited by A. R. Myers (1969), no. 457.
[16] S. E. Rigold, 'The St. Nicholas or Boy Bishop tokens', *Proceeding of the Suffolk Institute of Archeology*, 34 part 2 (1978), 87–101.
[17] M. Reeves, *The medieval town* (London, 1974).
[18] M. J. R. (M. Rigollet), *Monnaies inconnues des éveques des innocens, des fous et de quelques autres associations singulières du même temps* (Paris, 1837).
[19] Rigollet, p. 19.

evidence, but a substantial number of such tokens do exist. They come from two main sites, Amiens in France and Bury St Edmunds in England; though a few specimens were also produced at other towns both on the Continent and in England. The tokens of both regions date from the late fifteenth and sixteenth centuries, a chronology derived by Rigold for the English series and confirmed by dated specimens for the Continental series. The tokens commonly bear an episcopal design of some form and nearly all of them are inscribed; the exceptions generally being some stylistically late issues.[20] English tokens normally bear a religious inscription that commonly alludes to St Nicholas, though one type cites two Confraternities, the Congregacio Dusse and the St Nicholas Guild, which may have defrayed the expenses at Bury for that year. French issues not uncommonly cite the office of the Boy Bishop and they sometimes name him; for example:–[21] 'Mon. Nova. Epi. Innoc. A. 1499' (R. 7); 'Moneta Nova 1529 / Franchici. Epi. Innocetvm' (R. 13).

For what purpose did the Boy Bishop distribute his tokens? It is possible that they were purely largesse used for advertising the festival, but this seems the less likely view. In keeping with known contemporary usage it is far more likely that such pieces were given as alms to the poor (or to other recipients deemed worthy) that could be exchanged by their recipients for food or drink; reimbursement of the shopkeeper being an item in the expenses of the festival to be defrayed by whoever was responsible on that occasion: the junior canon in the case of Toul,[22] the church chapter in the case of several towns, or a confraternity accepting responsibility.

From the twelfth century onwards there arose a number of brotherhoods (confrairies: confraternities) with a combined secular and ecclesiastical membership. The Grand Confrèrie Notre-Dame aux Seigneurs prêtres et Bourgeois de Paris was established at the Madelaine in 1168.[23] One of the essential functions of the brotherhood was mutual support, lay members helping the clergy in temporal matters and vice versa. Mutual assistance also took the form of distributions among members paid from the revenue of the brotherhood. Two passages in the statutes for 1468 provide evidence that the provost appointed an officer who had special tokens made to pay the priestly brothers (*frères prebstres*) their '*distributions aux services*' and he had to render an annual account to the provost for this expenditure.[24] Fontenay published a token issued by a confraternity of Notre Dame.[25] This was used at the Church of St Stephen of the Greeks in 1559. Details relating to a number of other confraternities have been documented.

An aspect of the relationship between ecclesiastical and secular spheres is manifest in the function of alms-giving. This activity was commonly organised around the local church and, at least in the case of the larger cathedrals, alms-giving was often mediated through the distribution of leaden tokens. As has already been noted, the extant leaden tokens bearing inscriptions that specify this function only date from the sixteenth century onwards; although the actual practice goes back to a much earlier time. An example of 1569 is inscribed 'Sancte Amate Ora P. Nobis' around the saint's bust on one side and 'Distributio Ordinaria Canonicorum 1569' around a shield bearing three lis on the reverse. The canons of St Ami at Douai had the right, after assisting at holy office, to a portion of bread and wine. They were able to pass on this right and ordinarily distributed it to the poor. On leaving the church the canon gave away the token which enabled the recipient to claim his repast.[26] According to the archives of Bèthune there were, in the fifteenth century, distri-

[20] e.g. Rigold, class X.

[21] Rigollet, nos 7 and 13. Rigollet's tokens were later acquired by Feuardent and are included among nos 6543–6639 in F. Feuardent, *Jetons et méreaux depuis Louis IX jusqu'à la fin du consulat de Bonaparte* (Paris, 1904–15).

[22] Rigollet, pp. 41–6, describing the festival at Toul, as originally recorded in 1497.

[23] From 1224 some women were admitted and subsequently members normally included the king and queen. A cleric, commonly the archbishop of Paris, and a prominent laymen, such as a city magistrate, jointly headed the brotherhood. The Assumption (15 August), principal feast of the brotherhood, was celebrated by a procession from the Madelaine.

[24] Fontenay, pp. 90–2.

[25] Fontenay, p. 92: see also Feuardent, nos 4170–9. Within nos 4014–351, Feuardent includes numerous Parisian church tokens.

[26] Fontenay, p. 90.

butions of tokens (*méreaux*) to the poor in times of need. These tokens were taken to bakers commissioned by the commune or parish for the purpose and there exchanged for bread.[27] The use of tokens in alms-giving was widespread, but much of the documentation and of the extant tokens relate to later periods. A large series of alms-tokens from Liege[28] date mainly from seventeenth and eighteenth centuries, as do those from the Cathedral of Saint Salvator at Bruges.[29]

Medieval tokens produced by ecclesiastical authorities were not solely ecclesiastical in their usage. In the fifteenth century the chapter of St Omer distributed tokens to workmen and also sometimes to strangers. These tokens could be exchanged for food and drink at inns in the town approved by the chapter. The inn-keeper would then redeem from the chapter, on presentation of the token(s), the price of the repast.[30] Tokens issued by the chapter of St-Jean de Perpignan were also used in the neighbouring town.[31]

Continental documents attest the use of leaden tokens in secular, as well as ecclesiastical, circles during the medieval period. In Paris the introduction of 'candle tokens' led to a dispute in 1320 which has been recorded.[32] This dispute arose between the masters of the candle-workers guild and the poor women of the city who, since the time of St Louis (IX), had been in the habit of selling the candles in the streets. The subject of the dispute was an alteration to the mode of compensation of these women who were now to be paid by the masters in candle tokens, in place of the former receipt tickets. The women collected up their tokens and redeemed them for cash on the appropriate occasion.

Several earlier references to medieval secular tokens have been noticed. Buick and Buick[33] have cited a French charter of 1167 given to the count of Nevers which referred to tokens as articles well known and as conferring on those who possessed them the exclusive right to cry, carry and sell certain commodities which were specified. The same authors also cited an order made by the sheriffs of Douai and dated to 1217 which showed tokens of a particular description to have been employed at times as equivalents of certain small coins, a function also noted by Fontenay[34] for the towns of Perpignan, Termonde, Maubeuge and Puy. A further example of secular tokens appears in a French royal decree of 1346 referring to the 'clerks of the tokens for almsgiving'.[35] The issue of a tin token (*meriau d'estain*) is recorded in the Journal de Paris for 1429.[36] Lead tokens of fifteenth-century type found at Arras have been published by Dancoisne[37] who also cited several fifteenth-century ordinances forbidding their use as money.

Along the path from ecclesiastical to secular usage of tokens one enters the realm of the Trade Guilds: an environment already alluded to in connection with the Parisian candle-makers tokens being used in 1320. Although there is documentary evidence of guild tokens going back to the fourteenth century, one is again in a situation where actual tokens bearing inscriptions specifying particular guilds only date from the sixteenth century onwards. An extensive selection of tokens issued by the guilds of Paris from about 1500 has been published by Forgeais.[38] He also attributed a number of medieval pieces to various of these guilds because they bear guild emblems, but it is difficult either to verify or to refute such con-

[27] Forgeais, 5° série, *Numismatique Populaire* (Paris, 1866), p. 209.

[28] Fontenay, p. 95; Feuardent, nos 14585–606.

[29] G. Berry, 'Tokens of Bruges', *Coins* (1974), 16–18; L. Minard van Hoorebeke, *Description de méreaux et jetons de présence etc. des gildes et corps de métiers, églises etc.* (Gent, 1877–9).

[30] Fontenay, pp. 65–6.

[31] Fontenay, p. 66.

[32] Fontenay, p. 65.

[33] G. R. Buick and D. Buick, 'On a small collection of Presbyterian communion tokens', *Ulster journal of archaeology* 9 (1903), 17–30.

[34] Fontenay, p. 66.

[35] Buick and Buick.

[36] C. L. (C. Leber), 'Introduction, ou coup-d'oeil sur l'usage des médailles de plomb, le personnage de fou, et les rébus dans le moyen age', in Rigollet, p. xxv.

[37] L. Dancoisne, 'Les petits méreaux de plomb d'Arras aux types de mailles', *RNB* (1884), 55–65 and pls. II–III. He dated these tokens to the thirteenth and fourteenth centuries, but parallels with tokens found in London suggest a fifteenth-century date.

[38] A. Forgeais, *Numismatique des Corporations Parisiennes, métiers, etc.* (Paris, 1874) and also 1° série, *Méreaux des Corporations de métiers* (Paris, 1862). See also Feuardent, nos 4865–6 and others between nos 4831 and 5367.

clusions and in some of these instances identical tokens have been found in fifteenth-century contexts in the river Thames.[39] Guild tokens of the sixteenth-century French series are not a feature of the English scene though, as just noted, the medieval pieces that Forgeais would consider to have been their precursors do occur in fifteenth-century English finds. The socio-economic changes of Henry VIII's reign steered the development of English commercial tokens away from the guild pattern that was to continue in France and to evolve further in the Low Countries, an area studied by Dirks,[40] Perreau,[41] van Hoorebeke and Koning.[42] Many guild tokens from the Low Countries have recently been illustrated by Schulman.[43] The use of guild tokens as a means of remuneration for services rendered, a token that would subsequently be redeemed for money, has already been noticed in connection with the candle tokens (*merellos cereos*) current in 1320. But the guilds were essentially secular confraternities founded for the mutual support and benefit of the members and the primary use of guild tokens is likely to have been within the confines of the guild itself. In keeping with clerical usage, one function of guild tokens was probably related to the distribution of benefits to eligible members. During the post-medieval period in the Low Countries the function of guild tokens was extended to cover additional aspects in the obligation of mutual support between members. Members were obliged to support their fellows in times of trouble (e.g. fire damage) and to attend the funerals of deceased brethren. When fulfilling these obligations the exchange of a token confirmed fulfillment of the duty and an annual reckoning was made. The histories of two London guilds, the Pewterers[44] and the Tallow Chandlers,[45] have recently been investigated in some detail, though without mention of guild tokens.[46] That such artefacts may well have been considered too common-place for contemporaries to make a record of them is possibly attested by the Diary of Margery Kempe which was written about 1440.[47] Tokens do not feature in the wealth of contemporary detail found there, nor do pewter pilgrim's badges, though she travelled extensively and visited many pilgrim shrines. These also appear to have been too common-place to merit her written attention. Although Erasmus mentioned English leaden tokens as an incidental comment in his Adagia,[48] there was no report of such artefacts in the record of his visits to Walsingham and Canterbury.[49]

By the time of Elizabeth I when references to tokens are once more to be found the English culture and economy had passed through a severe metamorphosis, so one should be wary about extrapolating the economic role of Elizabethan tokens backwards into the medieval period. Nevertheless, contemporary comment is most instructive. In 1571

[39] To be published in the second part of this study. For similar tokens see C. Roach Smith, *Catalogue of the Museum of London Antiquities*, (London, 1854), p. 158 pl. 773; also S. E. Rigold, 'Jettons and Tokens', pp. 97–104 in G. and C. Milne, *Medieval waterfront development at Trig Lane, London: an account of excavations at Trig Lane, London 1974–6 and related researches*, Special Paper no. 5, London and Middlesex Archeological Society (1982).

[40] J. Dirks, 'Deux cents méreaux des corporations métiers des Pays Bas', *RNB* 3 (1859), 73–132; 'Jetons de présence aux funerailles etc., des quartiers de la Haye', *RNB* 3 (1859), 492–517; *De Noord-Nederlandsche Gildepenningen* (Leeuwarden, 1878).

[41] A. Perreau, 'Essai de monographie des méreaux des corporations de métiers des Pays-Bas', *RNB* 2 (1858), 380–430.

[42] D. A. Wittop Koning, *De penningen der Noord-Nederlandse Ambachtsgilden* (Amsterdam, 1978).

[43] J. Schulman, 'Guild medals and tokens', lots 2663 to 2903 in catalogue 275 (Amsterdam, Sept. 27/Oct. 1, 1982).

[44] J. Hatcher and T. C. Barker, *A history of British Pewter* (London, 1974).

[45] R. Monier-Williams, *The Tallow Chandlers of London* (London, 1971–7).

[46] *English Historical Documents: IV* includes quotations from numerous documents relating to medieval English guilds (nos 614 and subsequently) and details of the contributions made by local guilds to the building of Bodmin church in 1469–72 (no. 446). Guild tokens are not cited in any of these sources, nor in such studies as J. Bromley and H. Child, *The armorial bearings of the guilds of London* (London, 1960); C. Platt, *The English medieval town* (London, 1976).

[47] *The book of Margery Kempe (c.1440)*, edited by S. B. Meech (Early English Text Society London, 1940).

[48] P. Grierson, 'Notes on early Tudor coinage', *BNJ* (1972), 85–7. Grierson showed that Erasmus's comment on lead tokens did not appear in early editions of the Adagia: the first citation being in the Basel edition of 1533. The comment in the Adagia cited by many writers usually derives from an early notice by T. Snelling, *A view of the copper coin and coinage of England* (London, 1766), p. 2.

[49] *Pilgrimages to Saint Mary of Walsingham and Saint Thomas of Canterbury by Desiderius Erasmus*, translated by J. G. Nicols (London, 1849); first published with the title *Peregrinatio religionis ergo*, c.1524.

Westminster Abbey paid for 'Token money produced at Easter, 1571, £5 6s 4d, and on Trinity Sunday 4s 6d.'[50] In 1576/82[51] it was possible for Queen Elizabeth to write of 'a long contynued and yet a very intollerable and arrogant disorder used by private persons in makinge of tokens of leade and tynne, and generally coyned and put out instead of such small monys by grocers, vintners, chandlers and alehouse-keepers, and diverse other persons'. Budelius,[52] writing in 1591, also spoke of leaden money current among the English. A proclamation of Elizabeth I to the mayor and aldermen of Bristol in 1594[53] speaks of persons there who 'without any manner of authority, do frame and stamp in lead and brasse, certain farthing tokens of sundry sortes and making, uttering them to their private use in exchange of monies in their several trades and occupations'. In Dekker's play, 'The Honest Whore' (1604), Castruchio says:[54] 'Let me alone, I have a trick, a conceit, a thing, a device will sting him i'faith, if he have but a thimbleful of blood in's belly, or a spleen not so big as a *tavern token*'. A few years later, in 1612/13 (9 James I), Sir James Cotton recommended[55] a coinage of small moneys and stated that there were then in London 'above three thousand that, one with another, cast yearly five pounds a-piece in leaden tokens, whereof the tenth remaineth not unto them at the year's end, when they renewed their store, which amounted to above 15,000 L. The rest of the realm be reckoned not to be inferior to the city in proportion'. James I's proclamation of 1613[56] commenced with an acknowledgement that in times past some toleration had existed, in the realm, of tokens of lead, commonly known by the name of farthing tokens, to pass between vintners, tapsters, chandlers, bakers and other like tradesmen and their customers.

These comments on the many purposes for which leaden tokens were made emphasise some of the essential differences between a token and a coin within the framework of the medieval way of life. Although some comments have necessarily related to times later than the reign of Henry VIII, it should again be mentioned that until this period the kinds of tokens actually used and found in England and in France shared much in common with one another as judged from extant specimens, and their modes of use are also likely to have been similar in both countries.

Although one would wish that contemporary references to tokens should be easy to correlate with the tokens themselves, the actual relationship between these two classes of evidence is not so straightforward. The documentary evidence surveyed above shows that medieval tokens subserved a fairly wide variety of different functions. But the medieval tokens themselves, be they English or French, comprise a generally unform series of issues that evolved during the course of time. The apparent discrepancy can be reduced by making a rather more precise statement of the evidence: the documentary evidence refers to the wide spectrum of token users, whereas the tokens themselves provide information about the small number of token manufacturers.

The English tokens published here form a close-knit series with the issues in any one group sharing much in common regarding such features as engraving style, fabric and metal. Faced with the large variety of individual issues one should remember that these tokens were cast in multi-specimen moulds. The Scottish mould[57] for pictorial tokens produced six specimens that each bore different designs. The 2,061 pictorial tokens in the Dublin (Winetavern Street) hoard comprised replicates of only eighteen designs and all these were probably manufactured by the use of only three 6-piece moulds. The moulds for casting

[50] Smith, p. 34.

[51] Harleian MS no. 698. See Snelling, *Copper coin*, p. 3 and appendix one.

[52] Budelius, *De monetis et re numaria* (Cologne, 1591), II, p. 5. See Snelling, *Copper coin*, p. 2; and J.B. Caldecott and G. C. Yates, 'Leaden tokens', *BNJ* 4 (1908), 1–10.

[53] Snelling, *Copper coin*, appendix 3.

[54] Dekker, *The honest whore* (1604), part the First, Act 1, scene 4. The writers are grateful to Mr P. Munro-Walker for this reference.

[55] Ruding, I, 369, footnote 4.

[56] Ruding, p. 369.

[57] Discussed by M. Dolley and W. A. Seaby, 'A find of thirteenth-century pewter tokens from the National Museum excavations at Winetavern Street, Dublin', *NCirc* (1971), 446–8.

medieval tokens found in the River Seine and published by Forgeais[58] were all multi-token stone moulds. The number of tokens per mould varied with size: thus, six large tokens, four medium size tokens and variously six or ten of the small fifteenth-century 'cross and pellets' tokens.[59] It follows that the wide variety of English token issues observed in the present paper would have been produced from a very much smaller number of separate moulds: conceivably as few as fourteen moulds for the eighty-four issues of the main series pictorial tokens and eleven moulds for the 106 issues of main series geometric tokens. These are only hypothetical figures used to illustrate the point.

One feature that should be mentioned is that where several tokens have been catalogued as belonging to the same issue, these are nearly always products of the same mould. In the case of better preserved specimens, particularly among the pewter issues, one can define identical engraving details, identical mould flaws, design axes and positions of the casting sprue. These mould identities apply irrespective of whether the tokens came from the 1845 Aldersgate hoard, from late nineteenth-century collections or from the river Thames during the 1970s to early 1980s and also irrespective of the site in London where the tokens were found, or whether they were found in Dublin or in Paris. The picture that emerges depicts a concentrated and active token-making industry in London where large numbers of tokens were being made by a very small number of persons who mass-produced their merchandise from a handful of moulds and then made use of an effective and wide distribution service.

The pewter tokens appear to have been produced under ecclesiastical authority, the Church being the only recorded pewter manufacturer[60] during the hundred years, or so, before 1300 when most of the pewter tokens were produced. The expansion of English commerce under Edward I was followed by increasing organisation in the commercial sphere and this included the consolidation of a secular pewter industry[61] during the course of the early fourteenth century. The early fourteenth century was the period when the material of which tokens were made changed from pewter to lead and it is realistic to see the ecclesiastical pewter tokens being undercut and then replaced by cheaper secular issues made in lead by the rising metal workers misteries. Who made the leaden tokens? It is tempting to nominate the Pewterers mistery – despite the two obvious comments that the tokens are made of lead, rather than pewter, and that the Pewterers did not achieve guild status until 1473.[62] Against the latter, it must be noted that records of English pewtering go back to the early fourteenth century and that the craft was regulated in the Pewterers Ordinances of 1348.[63] As regards the former point, investigation of the various English misteries shows that lead-working was only pursued to an appreciable extent by two among

[58] A. Forgeais, 5° série, *Numismatique Populaire* (Paris, 1866), pp. 250–3. He also cited (p. 254) an extract from the Archives of Lille for 1460 citing the making of stone moulds for casting leaden tokens.

[59] For a medieval mould from Kent see B. Spencer, 'Roman and Medieval defences of Rochester', *Archaeologia Cantiana* 83 (1969), 102–3. For a medieval stone mould from a Yorkshire excavation see P. Mills, 'Medieval stone mould (Bedern)', *Bulletin of the Yorkshire Archaeological Trust* (1976), 11–13 and also C. Platt, *Medieval England: a social history and archaeology from the Conquest to 1600 AD* (London, 1978), pp. 99–100. A multi-specimen mould for casting false coins was published by P. Nelson, 'Plumbago mould for the fabrication of coins of Henry VII', *NC* (1905), 205–7 and pl. IX.

[60] Discussed in detail by Hatcher and Barker, *A history of British Pewter* and by J. Hatcher, *English tin production and trade before 1550* (Oxford, 1973). Ecclesiastical use of pewter was at a peak during the eleventh to thirteenth centuries and then declined quite rapidly after 1300.

[61] The earliest record of English secular pewter appears in 1307 (Hatcher and Barker, p. 34) and is followed by three records of London pewterers in 1311 (p. 38). Thereafter secular pewtering expanded rapidly while ecclesiastical usage declined.

[62] Bromley and Child, p. 197. Stow (p. 201) mentioned Pewterers' Hall and incorporation of the guild in 13 Edward IV.

[63] The 1348 Pewterers' Ordinances, discussed by Hatcher and Barker (p. 145), covered 'copper, tin and lead, in due proportions: of which three metals they make vessels, that is to say pots, salts, dishes, platters'. Two distinct pewter alloys were recognised: pewter for sadware was pure tin tempered with as much copper 'as of its own nature it will take' and for lay pewter was tin alloyed with lead 'in reasonable proportions'; not generally less than 4:1. The composition of pewter tokens (c.62 per cent tin) is not far removed from the 'lay pewter' recipe. The permitted amount of lead in lay pewter varied slightly – 22 lb per 112 lb tin in the 1348 ordinances just cited, 16 lb per 112 lb tin in a judgement against John de Hiltone in 1350, 26 lb per 112 lb tin in a fifteenth-century craft record (Hatcher and Barker, pp. 146–7 and 164).

them, the Pewterers and the Plumbers: the former regulated by ordinances in 1348 and the latter in 1365. The manufacture of small and intricate items requiring finesse and fine detail was more in the province of the pewterers than the plumbers; though it should be recalled that the production of accurate weights in lead fell within the domain of the plumbers.[64] If the manufacture of medieval English secular tokens is to be attributed to one of the craft misteries, then the Pewterers mistery appears to be the most appropriate candidate.

Having invoked the Church as manufacturer of most early pewter tokens and the Pewterers mistery as likely manufacturer of most subsequent leaden tokens, it is necessary to look once again at the tokens themselves. For one should beware of attributing any absolute monopoly to either group of manufacturers. Investigation of the tokens shows that well over three-quarters of them belong to close-knit series and it is these that can be attributed to the two major manufacturers – the Church and the Pewterers. But some tokens, both among the pewter series and also among the lead series, clearly fall outside the main groupings. One can make little comment about their makers – many craftsmen could have possessed the necessary technical knowledge, raw materials and commercial outlet.

The manufacture of tokens appears to have been a closely controlled operation, at least so far as the major portion of extant material is concerned. Their distribution was another operation that would also appear to have been well organised. The Dublin (Winetavern Street) hoard provides one item of evidence for bulk distribution – it being recalled that all of the Dublin designs are also known from mould-duplicate tokens found in London.

Who used the tokens and how were they used? Although the evidence is somewhat fragmentary one can make some suggestions. In a specifically English context it would be difficult to avoid drawing a relationship between the rapid growth of pilgrimage subsequent to the murder of Thomas a Becket in 1170[65] and the more or less contemporaneous development of an ecclesiastical token-producing industry. As one link there is the evidence that pilgrim inns were established by church authority (and often run by religious orders) close to major shrines and also along some pilgrim routes.[66] At that time the smallest royal coin was a silver penny and the average wage of a labourer on a day when he was fortunate enough to be working was also a penny.[67] In a rural environment it is doubtful if the average peasant even had much use for money during the twelfth and thirteenth centuries. Yet, many pilgrims belonged to the peasant class, both in England[68] and also in France.[69]

[64] Bromley and Child, p. 204. The Plumbers had the duty of testing leaden weights whereas the Founders tested weights made of brass and bronze. Bromley and Child discussed the evolution of Guild organisation in detail: none of the other fourteenth-century craft misteries seem likely to have been major producers of lead (or pewter) tokens. Regarding weights see also B. Kisch, *Scales and weights, a historical outline* (New Haven, 1965) and A. Dieudonné, *Manuel des poids monétaires* (Paris, 1925).

[65] Among the wealth of literature on Thomas Becket and the Canterbury pilgrimage some early descriptions and some publications concerning pilgrim badges have most relevance to the present discussion. For early descriptions see, in addition to Chaucer's *Canterbury Tales* and Langland's *Piers Plowman, The Book of Margery Kempe* (c. 1440), *Peregrinatio religionis ergo* (c.1524) of Erasmus, and W. Lambarde, *A perambulation of Kent* (London, 1570: edition of 1826), pp. 262–84. Regarding pilgrim badges see C. Roach Smith, 'Religious signs or tokens of the Middle Ages', *Collectanea Antiqua*, 1 (London, 1848), 81–91 and *Catalogue of the Museum of London Antiquities* (London, 1854); Forgeais, 2° série, *Enseignes de pélerinages* (Paris, 1863) and 4° série, *Imagerie religieuse* (Paris, 1865); B. W. Spencer, 'Medieval pilgrim badges', *Rotterdam Papers, a contribution to Medieval Archeology: teksten van lezingen, gehouden tijdens het symposium voor Middeleeuwse Archeologie, March 1966* (Rotterdam, 1968), pp. 137–53 and *Medieval pilgrim badges from Norfolk* (Norfolk Museums service 1980). For modern investigations of the medieval pilgrimage see R. C. Finucane, *Miracles and pilgrims: popular beliefs in Medieval England* (London 1977); D. J. Hall, *Medieval English Pilgrimage* (London, 1966); W. Purcell, *Pilgrim's England* (London, 1981).

[66] For instance, S. Heath, *Pilgrim life in the Middle Ages* (London, 1911), pp. 200–26; H. Loxton, *Pilgrimage to Canterbury* (Newton Abbot, 1978), pp. 105–10; and see previous footnote.

[67] *Dialogus de Scaccario: The Course of the Exchequer* (c.1176/8), edited and translated by C. Johnson (London, 1950) and 'Constitutio Domus Regis: Establishment of the Royal Household' (c.1136), pp. 128–35 in the same book. Daily labourer's wages have been analysed down to the reign of Henry VIII by J. Hatcher, *Plague, population and the English economy, 1348–1530* (London, 1977). See also *English Historical Documents: IV*. During the course of the Middle Ages the average daily labourer's wage rose from one penny to four pence; but due to monetary devaluations the actual amount of silver represented only doubled (1d. in 1230 weighed 22.5 grains; 4d. in 1530 weighed 42.7 grains).

[68] Finucane, pp. 130–51.

[69] E. le Roy Ladurie, *Montaillou; Cathars and Catholics in a French village, 1294–1324* (1978; Penguin edition 1980).

The modest daily requirements of peasant pilgrims would have been far better discharged through the use of tokens, than by coins whose value was too great. As a later example of one item of expenditure one can contemplate the two fellows of Merton College (Oxford) who travelled with four servants in 1331 and spent two-pence for beds for one night for all six persons.[70] Pilgrimages were normally organised events, rather than haphazard affairs, and with the Church acting as manufacturer, distributor and guarantor of tokens it is not difficult to conceive how the use of such pieces (presumably acquired by the prospective pilgrim at the time of his enrolment) would have lubricated the economic aspects of the journey. This interpretation, although analysed from another point of view, does have some affinities with two separate suggestions put forward by Akerman, when he published the first group of pictorial tokens in 1845, and at a later date by Caldecott and Yates.

Good ideas tend to be copied, and even though the major portion of early English pewter tokens may well have subserved the requirements of pilgrimage,[71] the same was certainly not always the case. One of the earliest French references to tokens (1167), says that only those persons who possessed the appropriate token had the right to merchandise ('cry, carry and sell') their wares. If one applies this statement to extant tokens of the earliest period and includes the concept that the merchant may also have demonstrated his authorisation token; then the sewn tokens are an obvious candidate. These early sewn tokens, which were used both in France and in England, can well be conceived as badge-tokens/tickets demonstrating authorisation of a merchant to pursue specified forms of commercial activity. Another class of early pewter token that clearly has no links with pilgrimage is represented by the brothel token catalogued below. A substantial number of later medieval brothel tokens is known,[72] but this is the only early pewter specimen. The most renowned London brothels were the Stewes on the Southwark bank of the Thames. In the 1603 edition of survey of London, John Stow introduced them as 'the Bordello or Stewes, a place so called, of certaine stew houses priviledged there, for the repaire of incontinent men to the like women'. The activities of the privileged stew houses were regulated by parliament in 1161/2 (8 Henry II) and at various later dates.[73]

Progressing to the secular leaden tokens of the fourteenth century, it is not difficult to conceive how a pre-existing ecclesiastical concept linked with pilgrimage could have been extended to encompass a variety of functions in the commercial sphere. The wider range of uses, both ecclesiastical and secular, to which such tokens were now put is at least partly documented in the French sources discussed previously. What is also apparent from comparison of fourteenth-century tokens (English and French) with fourteenth-century records is that, although a few users may have made their own tokens, the great majority of token-users purchased their stocks of tokens from a centralised manufacturing source.

The organised system of token manufacture and distribution suffered transient interruption in the middle years of the fourteenth century. The transition from 'pictorial' tokens to 'geometric' tokens is quite clearly placed in the same period as Edward III's succession of currency devaluations;[74] the years around 1350. This major change in the form of tokens, and also the several ephemeral minor groups of 'transitional' tokens that share a well defined

[70] Loxton, p. 109. Regarding the shortage of small change and monetary policies of the period under consideration see Ruding and also M. Mate, 'Monetary policies in England, 1272–1307' *BNJ* 41 (1972), 34–79; N. J. Mayhew and D. R. Walker, 'Crockards and pollards: imitation and the problem of fineness in a silver coinage', *Edwardian monetary affairs (1279–1344)*, edited N. J. Mayhew (British Archaeological Reports 36. Oxford, 1977), pp. 125–46.

[71] A parallel to the unauthorised copying of tokens can be seen in the case of medieval pilgrim badges in whose sale the church tried to maintain its own monopoly. Despite threats of excommunication local townspeople often made badges (and other relics) for sale to pilgrims. See Spencer, *Rotterdam papers*, pp. 141–2.

[72] Forgeais, *Numismatique populaire*, pp. 257–70.

[73] Stow, II, 54–5.

[74] The statute of 18 Edward III (1344) ordained that 266 pence should be made from one tower pound of silver (hence 20¼ grains per penny, in place of 22 grains hitherto). This was increased to 270 pence per pound (penny 20 grains) in the statute of 20 Edward III (1346) and to 300 pence per pounds (penny 18 grains) in the statute of 27 Edward III (1353). The weight of the silver penny thus fell from 22 to 18 grains. See Ruding for details.

		Number[a] catalogued	Weight (gm)[b] *major series*	Weight (gm)[b] minor series	Diameter (mm)[c] *major series*	Diameter (mm)[c] minor series	n[d]	Thickness (mm) *major series*	Thickness (mm) minor series	n[e]
A Pewter										
Sewn tokens		14	–	var.	–	var.	14	–	var.	1[f]
Prototype tokens	A[g]	3	–	1½–2	–	18–21	3	–	–	
	B	3	1.9 (0.1)[h]		19 (0)		3	–	–	
	C	1	–	1½	–	17	1	–	–	
	A+B+C			(1¾)		(19.1)		0.96 (0.07)		3
Beaded border tokens		28	1.0 (0.2)		18.0 (0.05)		11	0.69 (0.15)		24
Main pictorial tokens	A	1	–	3½	–	21	1	–	1.05	1
	B	129	0.72 (0.1)		15.7 (0.5)		97	0.60 (0.14)		47
Subsidiary pictorial tokens		2	–	0.55	–	15	1	–	0.38	1
Late pictorial tokens	A.1	12	0.59 (0.1)		14.8 (0.6)		11	0.50 (0.12)		5
	A.2[i]	12	–	0.77 (0.2)	–	14.8 (0.5)	5	–	0.58 (0.19)	7
B Lead										
Late pictorial tokens	B.1	53	0.93 (0.2)		15.0 (0.5)		27	0.64 (0.12)		9
	B.2	47	–	1.28 (0.2)	–	14.8 (0.9)	13	–	0.81 (0.13)	8
				1.02 (0.03)		14.4 (0.8)	4			
				0.83 (0.2)		12.1 (1.3)	4			
Mid 14th century transitional tokens	A	7	–	1.11 (0.4)	–	15.6 (1.1)	7	–	–	
	B[j]	5	–	1.3–2.7	–	18–24	5	–	1.12	1+2[k]
	C	12	–	1.41 (0.3)	–	16.8 (0.9)	8	–	0.75	1+5
	D	12	–	1.08 (0.2)	–	13.2 (0.4)	6	–	0.62+	10
Geometric tokens	A	2	–	1.6–2	–	20–21	2	–	–	
	B	138	1.11 (0.2)		14.4 (0.8)		86	0.62+		80
Contemporary geometric tokens	A	2	–	1.4–2.7	–	13–15	2	–	–	
	B	4	–	(all worn)	–	(all worn)	4	–	–	

a. The total number of tokens whose diameters and weights are recorded in the catalogue (*infra*): pewter 205, lead 282: altogether 487.
b, c. Statistical analysis was only performed on tokens in good condition.
d. Number of tokens in good condition upon which statistical analyses were performed.
e. Number of tokens whose thickness was measured with a micrometer.
f. One sewn token was 0.65 mm thick, but observation shows a wide range.
g. Pure tin tokens.
h. Standard deviations (n - 1) are cited in parentheses.
i. The last pewter issues (A.2) tend to be rather degraded specimens retaining much the same diameter as A.1 tokens. But they are generally thicker and heavier and with a wider range of variation in these two measurements (cf. standard deviations).
j. A transient revival of pewter.
k. i.e. 1 token was measured (1.12 mm) plus two were checked with a micrometer to make sure their thickness was no less than 0.62 mm.

mid-century date, appear as consequences of the socio-economic upheaval wrought by the Black Death.[75]

Once economic re-organisation had taken place the evidence provided by the 'geometric' tokens suggests a return to a closely monitored and centralised system of secular token manufacture. The coherent series of 'geometric' tokens, among which one should presumably see the 'leaden tokens' referred to in the Commons' petition of 1402, remained current from the later years of Edward III until the reign of Henry VI; a time that marks the end of the present study.

THE TOKENS

The size of the Tokens

The general pattern of evolution in the size of tokens is apparent from the figures in the accompanying table. Two features seem to have played an important role in shaping their evolution, namely the fact that lead is softer than pewter and the size of the silver coins. Thin tokens made in pewter are noticably more durable than tokens of the same thickness made of lead: one also notices that very thin lead tokens possess more casting flaws than pewter specimens of the same module. These observations are reflected in the analysis by an increased thickness of tokens after their material changed from pewter to lead. The weight of successive pewter token series declined progressively in parallel with their declining diameter: 1.9 gm (19 mm) – 1.0 gm (18 mm) – 0.72 gm (15¾ mm) – 0.6 gm (15 mm). With the change to lead the diameter tended to remain stable, but the weight (and thickness) showed a noticeable increase: 0.9 gm (15 mm) – 1.1 gm (14½ mm).

The second point that has been mentioned is the link between the size of tokens and that of contemporary silver coins. This link refers to the diameter, and not to the thickness or the weight. The size of the token flan appears to have been modelled on the size of the silver penny at the period when tokens first made their appearance during the decades around 1200. The short cross pennies and the early tokens of this period both have diameters around 19 mm. Thereafter coins and tokens followed their individual patterns of evolution until the time of Edward III, when the diameter for most types of tokens stabilised at about the same size as the sterling halfpenny: 14½ to 15 mm.

Figures relating to the major series provide a concise picture of the main evolutionary stream:–

			Weight	Diameter	Thickness
Pewter	Prototype circular tokens		1.9 gm	19 mm	1.0 mm
(tin 62%, lead 38%)	Beaded border pictorial tokens		1.0 gm	18 mm	0.7 mm
	Main pictorial tokens		0.7 gm	15¾ mm	0.6 mm
	Late pictorial tokens	A.1	0.6 gm	15 mm	0.5 mm
Lead	Late pictorial tokens	B.1	0.9 gm	15 mm	0.6 mm
(virtually 100%)	Geometric tokens	B	1.1 gm	14½ mm	above 0.6 mm

The Metal Composition of the Tokens

Fig. 1 shows the general pattern of token composition as a function of time over the period considered in this paper. Contemporaneous groups have been consolidated into the same time-frame, but also an effort to show the extent of diversity has been made by separating out the few tokens significantly different from the average for the period. Specifically, throughout the thirteenth and fourteenth centuries, a few tokens are always found of a composition approximately 1:1 tin:lead. During the earlier periods, there are a few tokens with more tin than average; and later there are a few with less.

The metallurgical evolution shown by this figure can be correlated with social and economic changes. During the decades around 1200, the period when these tokens were introduced, tin was still an uncommon metal, whose use was virtually restricted in England to ecclesiastical circles. A further century was to elapse before the first recorded mention of English secular pewter. Thirteenth-century English pilgrimage ampullae, in which holy water was collected, were made of almost pure tin. These ampullae analysed in a simultaneous study (to be published) relate to the shrines of Canterbury, Westminster and Walsingham. One class of the present tokens (Prototype circular A) is likewise made of almost pure tin. Pilgrim badges

[75] Tin mining was severely curtailed and the price of tin quadrupled; factors that may have confirmed the use of lead, rather than tin, as the metal for tokens. See *An historical geography of England before AD 1800: fourteen studies*, edited by H. C. Darby (Cambridge, 1969), especially pp. 228 and 259; also Hatcher and Barker. Edward III's Statute of Labourers (1351) was a response to substantial demands for increased wages, consequent upon the labour shortage. Actual figures for wages and wheat (staple commodity) prices reached their maxima during the 1360s. See Hatcher, *Plague, population and the English economy*; also B. W. Tuchman, *A distant mirror: the calamitous 14th century* (1978).

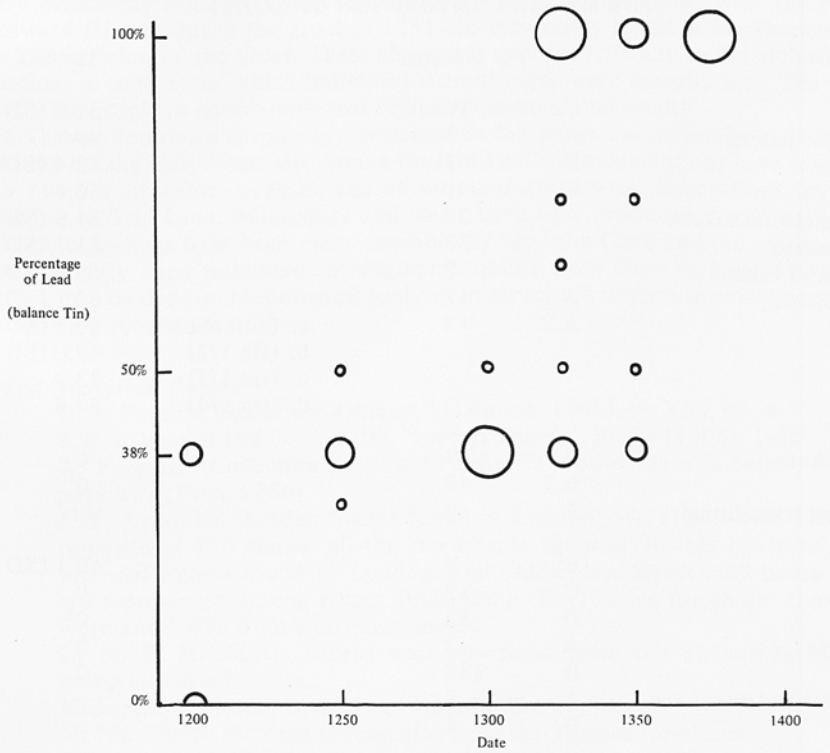


FIG. 1 Compositions of the tokens as a function of time

were either sewn or pinned onto the hat or garment. Those of thirteenth-century date and also most fourteenth-century badges analysed by us (Canterbury, Westminster, Walsingham and other Shrines) were not made of tin, but of pewter. Both the badges and the tokens were made of a uniform quality pewter containing close to sixty-two per cent tin and the balance lead.

There is nothing mystical about these proportions of tin to lead; only a fundamental practical advantage. These percentages represent the eutectic mixture for a tin-lead alloy; the composition possessing the lowest melting point and the sharpest transition from liquid to solid, both important features in the casting process. Above and below this percentage of tin, an intermediate 'pasty' stage is introduced into the cooling process, in which lumps of solid metal crystallize from solution. Clearly this can lead to major casting faults. The pasty stage is very lengthy for alloys containing only a small amount of tin. The question remains as to how medieval metalworkers achieved the degree of quality control needed to keep their compositions fairly close to the eutectic value. Early recipes, such as those of the Romans, give ratios by weight of raw materials (e.g., two parts tin to one of lead). For the eutectic, one would need three parts tin to two of lead; not a difficult weighing exercise if it were known. Alternatively, the metalworkers may have simply observed the behavior of their melt, and removed the lumps of solid metal until the remaining liquid cooled virtually immediately to solid. To the best of our knowledge, there is no direct evidence of this sort of technique being used. It is, however, clear that the use of eutectic pewter was well-known.

Pewter tokens were made, probably under ecclesiastical authority, throughout the thirteenth century almost exclusively of eutectic composition. In the early fourteenth century, the metal composition changed from sixty-two per cent tin to pure lead, essentially in a single step, though it is also apparent that for some time (Late pictorial tokens) tokens of the traditional pewter alloy circulated alongside the new leaden tokens. From the economic standpoint the stepwise change is logical, since there would have been no real advantage in using metal of intermediate tin content. The cost saved by using less tin would have been offset by the greater difficulty of handling a low-tin alloy.

There are two possible causes for such a changeover. One would be a shortage of tin. However, as noted above, pilgrim badges produced for ecclesiastical usage continued to be made of pewter, and while tin production slumped in this period, it was never zero. A more likely cause is the rise of a new source of manufacture.

It is suggested that the new and cheaper lead tokens were a secular product, undercutting the ecclesiastical pewter tokens and destroying the virtual ecclesiastical monopoly at the beginning of the fourteenth century.

THE METAL COMPOSITION OF TOKENS

		Number[a]		Tin (%)	n[b]
A Pewter					
Sewn tokens		14		55.8 (SD 7.4)[c]	7
Prototype circular tokens	A	3		99+	3
	B	3		62.4 (SD 1.7)	3
	C	1		60.8	1
Beaded border pictorial tokens		28		61.9 (SD 4.2)	23
Main pictorial tokens		130		61.1 (SD 3.3)	59
Subsidiary pictorial tokens		2		63.4 (SD 2.3)	2
Late pictorial tokens	A.1	12		62.1 (SD 3.5)	11
	A.2	12	a. (eutectic)	63.5 (SD 3.9)	8
			b. (tin 1/2)	49.0 (SD 3.1)	2
			c. (tin 1/3)	33.9	1
			d. (tin 1/4)	24.8	1
B Lead					
Late pictorial tokens	B.1	53		0	27
	B.2	47		0[d]	21
Mid 14th century transitional tokens	A	7		var.[e]	7
	B[f]	5		60.1 (SD 4.9)	5
	C	12		0	6
	D	12		0[g]	7
Geometric tokens	A	2		0	1
	B	138		0	39
Contemporary geometric tokens	A	2		–	0
	B	4		–	0

a. The total number of tokens whose diameters and weights are recorded in the catalogue (*infra*): 487.
b. Number of tokens whose metal composition was analysed by X-ray fluorescence: 234 specimens.
c. Standard deviation (n - 1).
d. A tin content of about 10% in two tokens probably represents re-cycled scrap metal.
e. Variable amounts of tin are often present, probably representing re-cycled scrap metal.
f. A transient revival of pewter.
g. A tin content of 7% in one token, probably representing re-cycled scrap metal – as in other instances where a low tin content has been observed.

The transition may not have been quite so simple, but it is probably true to conceive that thirteenth-century tokens were essentially ecclesiastical products, whereas leaden tokens from the fourteenth century onwards were essentially secular products.

General Stratigraphy, Abbreviations and Analytical Details

Much of the chronological framework within which these tokens are dated is derived from stratigraphic observations. Nearly all the tokens published here have been recovered by use of metal detectors in a large number of separate digging operations at sites along the Thames foreshore in the City of London and, to a lesser extent, on the Southwark bank. When a hole is dug it is often possible to draw chronological relationships between closely associated artefacts. The large body of experience that has now accumulated presents a clear and reproducible general picture. So far as the tokens are concerned the stratigraphic evidence from the Thames foreshore takes two main forms – certain kinds of token are consistently associated with certain classes of regal coin, and certain kinds of token are consistently encountered in either older or newer strata than other classes of token (or coin). One has both a relative chronology based on stratigraphic relationships between different series of token and also a more absolute chronology derived from relationships between tokens and coins.

In this latter connection it is necessary to emphasise that dating depends on some knowledge of the period during which a particular form of coin remained in general circulation. Relating to the material presented here it should be mentioned that Edward I, having reformed the coinage in 1279, formally de-monetised shortcross and longcross pennies in 1280. Shortcross and longcross pennies only tend to be found in earlier Thames-side strata than the reformed pennies of Edward I; so it is logical to date this dividing line at around 1280. Edward III's currency devaluations of 1344, 1346 and 1353, which saw the statutory weight of the silver penny fall from 22 grains to 18 grains, provide another marker. The

older coins were effectively removed from circulation by these devaluations, with the result that coins made before Edward III introduced the groat in 1351 are very rarely found in the Thames alongside coins made after the introduction of the groat. These comments apply specifically to the archaeological material under consideration, a context in which individual current coins were casually lost. The same comments are not necessarily applicable to coin hoards that represent accumulated wealth.

Much of the Thames foreshore chronology presented in this paper was originally elucidated by Mr Nigel Mills while working on the Bull Wharf site during the late 1970s. His conclusions have been confirmed and amplified by a number of other workers, and at various further sites. Excavations undertaken by the Museum of London at Trig Lane, Billingsgate and Swan Lane have produced a comparable chronological picture. The Museum findings have been made available by Mr John Clark and the results of the Trig Lane excavations have recently been published. Stratigraphic results from these various excavations have been additionally monitored by dendrochronological analyses of structural timbers in revettments and by studies on the forms of pottery recovered.

Abbreviations and Analytical Details

CA — C. R. Smith, *Collectanea Antiqua*, I (London, 1848), pl. XXI, no. xi

CY — J. B. Caldecott and G. C. Yates, 'Leaden Tokens', *BNJ* 4 (1908), 1–10

F — A. Forgeais, 'Collection de plombs historiés trouvés dans la Seine', 5° *Numismatique populaire* (Paris, 1866)

LW — J. Y. Akerman, 'Leaden tokens found in London', *NC* (1845–46), 116–117. The plate opposite p. 116 shows 'all the remarkable varieties' in this hoard of several hundred pictorial tokens found at London Wall (Aldersgate Street). All issues in the LW plate are represented among recent finds along the Thames foreshore, though LW3 is very worn and LW9a from a different mould.

M — Dr M. B. Mitchiner: tokens were recovered from the Thames foreshore in London unless stated otherwise.

MOL — Museum of London; courtesy of Mr John Clark

N — Mr Nigel Mills; pictorial tokens, also from the Thames foreshore

RS — Charles Roach Smith, *Catalogue of the Museum of London Antiquities* (London, 1854), pp. 156–7 and pl. XVI. Pictorial tokens found in London (sites not specified; though some were from the London Wall hoard).

TR — S. E. Rigold, 'Jettons and tokens', in G. and C. Milne, *Medieval waterfront development at Trig Lane, London: an account of the excavations at Trig Lane*, Special paper no. 5, London and Middlesex Archeological Society (1982), pp. 97–105. A pictorial token (TR61 = WTS12) and a number of later issues; most types, or closely related variants, also being known from Thames foreshore finds.

WTS — M. Dolley and W. A. Seaby, 'A find of thirteenth-century pewter tokens from the National Museum excavations at Winetavern Street, Dublin', *NCirc* (1971), 446–48. A clump of rouleaux found in a level of cesspit filling dated to the third quarter of the thirteenth-century: 2,061 tokens from 18 mould-pairs (probably 3 x 6-piece moulds). All of the WTS issues are also known from Thames foreshore finds, as follows:–

WTS 2	(135 pieces)	M x 1	WTS 22	(123 pieces)	M x 2
WTS 3	(123 pieces)	M x 1	WTS 23	(124 pieces)	M x 4
WTS 4	(122 pieces)	M x 1	WTS 25	(120 pieces)	M x 3
WTS 5	(126 pieces)	M x 1, N x 1	WTS 26	(132 pieces)	M x 4
WTS 6	(95 pieces)	M x 1	WTS 28	(116 pieces)	M x 2
WTS 7	(91 pieces)	M x 2	WTS 31	(120 pieces)	M x 2
WTS 11	(117 pieces)	M x 1	WTS 32	(104 pieces)	M x 1
WTS 12	(114 pieces)	M x 1	WTS 33	(109 pieces)	M x 1
WTS 17	(100 pieces)	M x 1	WTS 34	(90 pieces)	M x 2

W — Tokens listed by Dolley and Seaby (1971), but not actually represented in the Dublin Hoard.

Expanding cross: This common design is sub-divided for descriptive purposes into three forms according to the shape of the arms whose sides are either 'Straight' (i.e. wedge-shaped), 'Convex' (i.e. shield-shaped) or 'Concave'.

Shields: When divisions are numbered (e.g. Shield bendy 5.4) the first number refers to cross-hatched divisions and the second number of the void divisions. The use of heraldic terminology follows generally Brooke-Little[76] and Fox-Davies.[77] A pictorial token of the main series depicting 'bear wearing cap' (cf. no. 36 and WTS 4) and 'six-foil

[76] *Boutell's heraldry*, revised by J. P. Brooke-Little (London, 1978).

[77] A. C. Fox-Davies, *A complete guide to heraldry* (London, 1969).

void (field chequy)' was recovered in excavation at the Dominican Friary in Boston, Lincolnshire.[78]

Type number: In each class token types are numbered from '1' and the class itself is given a reference letter. Thus 'A2' is a sewn token of type 2, 'D2' is a main pictorial token of type 2.

Analysis: Apart from a few exceptions, the analyses were performed on tokens belonging to M (Dr M. B. Mitchiner). The exceptions are early tokens belonging to N (Mr Nigel Mills) who originally recovered a substantial portion of all these tokens, plus selected specimens from the Museum of London collection (courtesy of Mr John Clark).

Weights: Expressed in grammes.

Diameters: Expressed in millimeters. In the case of sewn tokens the maximum height to the top of the attachment loop is also cited.

Thickness: Expressed in millimeters. This is the thickness of one spot on the token. In most cases it is the thickest portion, not the average thickness of the token. The micrometer was not closed tightly on to the token, so there is an inherent margin for error. The original purpose of these measurements was to tell whether the token was promising for XRF examination, or if the counting efficiency was likely to be low. Pewter tokens were used for the calibration of thickness-versus-counting statistics: so these have been examined more comprehensively than the (generally thicker) lead tokens.

Condition: G (good); D (damaged, but otherwise little worn); H (hole, either a nail piercing or a significant casting flaw); W (worn). Statistical analyses of token weights and diameters have been restricted to specimens cited as being in Good (G) condition. Although quite a number of tokens are imperfect (D, H), only a fairly small minority of the pewter specimens show evidence of extensive circulation (W).

Design Axes: The angle of the reverse design axis, numbered by the clock-face, is cited in relation to the obverse design axis aligned at 12 o'clock. Since these tokens were cast in multi-specimen moulds with precise alignment required, it follows that mould-duplicate tokens will have the same design axes.

Provenance: Nearly all tokens included in the analysis were retrieved with the help of metal detectors at diggings along the foreshore of the river Thames in London. The site is specified for each token when known. It does not appear that any particular type of token is localised to a particular stretch of the river bank situated within the confines of medieval London for any other reason than the availability of stratified muds deposited at the relevant period. Tokens cited as SE England were found in the late nineteenth century and have no individual provenance.

X-ray fluorescence analyses: These have been performed at the Research Laboratory for Archaeology, Oxford University (Dr A. Skinner). Tokens have normally been examined on the edge, though some of the uniface sewn tokens were additionally examined on the back. When a sample of pewter (or other metal) is irradiated with X-rays, the various atoms are excited and then emit X-rays of lower energies that are characteristic of the elements present. The emitted X-rays are detected and counted, and the resulting data compared with the emission intensities from standard samples of known composition. Chemical analyses reported here were obtained by use of a Si (Li) solid-state detector and a 50 kV transmission target X-ray tube (Molybdenum target). The tube was operated at 40 kV and 0.9 mA for a counting time of 300 seconds. A brass beam collimator was used to give an elliptical primary beam of approximate dimensions 2 x 1 mm at the sample position, which was indicated by a rigid retractable pointer. The whole token was placed in the analysis position after first removing surface corrosion by means of a sharp scalpel from a 1 mm width of the edge to be analysed. Cleaning and analysis were performed at least twice on the same spot, and repeated if necessary until satisfactory agreement was obtained. Further technical details have been discussed elsewhere,[79] as has the potential problem posed by surface enrichment in a particular metal, either intentional or by corrosion.[80]

[78] S. Moorhouse, 'Finds from excavations in the refectory at the Dominican Friary, Boston, Lincolnshire', *History and Archeology* 7 (1972), 44.

[79] M. Robinson and A. M. Pollard, 'Analysis of Burmese coins by X-ray fluorescence', *NCirc* (1983), 263–6, 293–6; M. B. Mitchiner and A. M. Pollard, *Early South East Asian currency systems*, Royal Numismatic Society special publication (submitted 1983).

[80] Both papers just cited; also J. Condamin and M. Picon, 'Changes suffered in the course of time and the influence of these on the results of different methods of analysis', in *Methods of chemical and metallurgical investigation of ancient coinage*, edited by E. T. Hall and D. M. Metcalf, RNS Special Publication no. 8 (1972), pp. 49–66; E. R. Duncan Elias and Z. A. Stos-Gale, 'Classification of some silver coins of Aquitaine on the basis of the results of semiquantitative XRF analysis', *NCirc* (1981), 356–7.

In the context of the present analyses it should be noted that XRF examines only the top 50 microns (0.05 mm) of metal, whereas diffusion can carry corrosion products further into the body of a metal object then superficial cleaning will necessarily remove. This caution should be applied to the detection of copper and iron in the tokens analysed here. In cases where the amount of copper correlates with the amount of iron one has a good indication that chalcopyrite (an iron-copper suphide) has been deposited on the token during burial and diffused into the body of the metal, at least as far as the depth of cleaning. Several samples in which this was suspected were tested for sulphide ion, using lead acetate. All tests were clearly positive. In other instances tokens show a few per cent concentration of copper in the absence of iron.

Tin and lead, with minimum detectable levels (MDL) of 0.27 per cent for tin in a lead matrix and 0.1 per cent for lead in a tin matrix, were the major elements in these tokens. The tokens were also examined for traces of other elements, including bismuth,[81] antimony, iron, copper, zinc, mercury,[82] and silver. Only iron (MDL 0.05 per cent) and copper (MDL 0.07 per cent) were detected: as already noted. The MDLs for antimony, zinc and silver all lie below 0.5 per cent; but in the present context detection of bismuth is less sensitive. This is because lead and bismuth emit X-rays of nearly the same energy. So, increasing concentrations of lead in a token correspondingly reduce the sensitivity for detecting the presence of bismuth. Having analysed some medieval pilgrim souvenirs made of tin plus added bismuth we have found no evidence that bismuth is present in any tokens. In the case of a pewter token containing around one third lead the MDL for bismuth should be assessed at about one or two per cent (higher for an almost pure lead token). The 'K' line was used as the basis for calculation.

Illustrations: Photographs of the tokens illustrated on the plates are all enlarged twice. Approximately one third of the issues are illustrated and they are indicated in the catalogue by an asterisk after the number.

Acknowledgements: We are grateful to Dr A. M. Pollard and to Messrs. N. Mills and J. Clark whose contributions are cited in the text; also to Messrs. A. Allen, B. Curtis, A. Edwards, G. Grant, A. Pilsen and A. Stewart without whose help much of the evidence discussed in this paper would not have been available.

A) SEWN TOKENS (Ampulliform tokens; Jangles; Alms-purse tokens [*aumonières*]) (Plate 1)

Provenance: London and Paris – with about equal frequencies.

Chronology: Early thirteenth century

1. found with short cross pence (incl. class 7: c.1223–42) at several Thames sites
2. found in deeper strata than short cross pence at Bull Wharf (Thames, city bank)
3. found with a prototype pictorial token
4. found with other pictorial tokens (early types) at several Thames sites
5. found with a cut half-penny of Stephen (contemporaneity not necessarily precise)
6. found in an early thirteenth-century stratum at the Swan Lane excavation (MOL)
7. the most likely candidates for the French description of 1167 (*vide* discussion)

Metal: Pewter (with around 55 per cent tin, slightly lower than most pewter tokens)

Shape: Circular flan (diams. cited below) with a double loop at the top for attachment

Size: Variable – from 17 x 14 down to 9 x 7 mm; 0.6 down to 0.1 gm

[81] Dolley and Seaby's ('Winetavern Street') preliminary publication of the Dublin tokens contained the comment that bismuth was present, but no further details have been forthcoming. Otherwise, apart from the exception provided by some medieval 'Canterbury bell' pilgrim souvenirs analysed by us, the earliest report of bismuth being used for hardening pewter dates from the sixteenth century. See R. F. Tylecote, *A history of metallurgy* (London, 1976), p. 78. In our own analyses of contemporary English coin forgeries bismuth was first used as a hardener for tin in a group of Elizabethan forgeries bearing dates from 1561 onwards; see M. B. Mitchiner and A. Skinner, 'Contemporary forgeries of English silver coins and their chemical compositions: Henry III to William III', *NC* (in the press for 1985).

[82] In the twelfth century Theophilus recommended that the composition of pewter should be 'tin hardened by a small amount of mercury' (one part mercury in 960 parts tin according to one interpretation); see Hatcher and Barker, pp. 211–13; also Tylecote. A concentration of 1:960 parts mercury in tin is slightly below the MDL using the XRF technique. The presence of any more mercury than this trace amount has been excluded from the tokens analysed here. A false English groat analysed by us contains between one and five per cent mercury in tin – approximately the four per cent alternative interpretation of the recipe cited by Theophilus.

Types: (a pictorial design enclosed by a *beaded border*: the reverse is blank)

1.	Quadruped left, head reverted (? Pascal lamb)	London	M
2.*	similar	London	M
		Paris	F (p. 217, 4: 219)
3.*	Quadruped right, head reverted (? Pascal lamb)	London	M
4.	Lion right	London	M
5.*	similar	London	M
6.	similar	Paris	F (p. 217, 3: 219)
7.	similar	London	M
8.*	Bird left (Raven)	London	M
9.	Bird right (Raven): head reverted	London	N
10.*	Eagle displayed	London	M
		Paris	F (p. 216–7: x8)
11.	Double headed eagle displayed	Paris	F (p. 217, 2)
12.*	Two birds with a plant between	London	M
13.	Ship (?)	Paris	F (p. 217, 5: 218)
14.*	Voided star (4 points)	London	M
15.*	Field quartered: segments chequy	London	M
16.	uncertain design	London	M

Many forms of pictorial image on these tokens also appear on English circular thirteenth-century tokens; but the designs on circular tokens tend to be more realistically engraved. The beaded border around the design is common to these tokens and to the earliest English circular tokens; both have also been found together. No mould duplicates have been observed in this series (a marked contrast with the circular pictorial tokens), but the style of engraving is consistent.

Subsidiary bi-face type

17.	uncertain design	Straight cross, partly void (field chequy)	London	MOL (3505)

The attachment loop is missing and the designs are not enclosed by a beaded border. The token is also thicker than other sewn tokens.

Analysis of sewn tokens:

Type	Weight	Diameter	Thickness	Condition	Design Axes	Tin (%)	Lead (%)	Provenance
1	0.40	16 X 12*	–	W	–			Billingsgate
2	0.16	12 X 9	–	D	– (edge)	65.5	34.5	Bull Wharf
3	0.44	15 X 12	–	G	–			Billingsgate
4	0.20	12**	–	D	–			Bull Wharf
5	0.25	12 X 10	–	G				Bull Wharf
7	0.24	10 X 7	0.65	H	– (back)	55.0	45.0	Bull Wharf
					(edge)	60.9	39.1	
8	0.34	12**	–	D	–			Bull Wharf
9	0.41	16 X 12	–	G	– (back)	52.4	47.6	Bull Wharf
10	0.09	9 X 7	–	G	–			Bull Wharf
12	0.28	14 X 12	–	D	–			City Bank
14	0.57	17 X 14	–	G	–			Billingsgate
15	0.50	11**	–	D	–			Swan Pier
16	0.28	13 X 9	–	W	– (back)	46.2	53.8	Bull Wharf
					(edge)	48.2	51.8	
	Subsidiary							
17	0.34	10**	0.70	D	– (edge)	62.7	37.6	Swan Lane

*The larger number indicates the height to the top of the attachment loop: the smaller is the diameter
**Indicates that the double loop attachment at the top is broken

Only a small number of sewn tokens were analysed, because many are too thin to obtain accurate results. Some analyses were performed on the edge, others on the back, of the tokens.

Tin % Mean 55.8% (SD 7.41: n = 7)

B) PROTOTYPE TOKENS
(Plate 1)

Provenance: London (no related issues of other provenance recorded)
Chronology: Early thirteenth century
1. found with short cross pence (B)
2. one found with a sewn token and a pictorial token (C)
3. one found with pictorial tokens (A.1: MBM)

4. one found with a thirteenth-century Canterbury ampulla and pictorial tokens (A.2)
5. one found with long cross pence (A.1: MOL)

Metal: Tin (A), or Pewter (B, C: eutectic mixture)

Form and size: Circular pieces with pictorial designs on obverse and reverse; consistently broader and thicker than subsequent pictorial tokens. The pewter specimens of group B have a beaded border around the obverse design

Types:

A) *Tin pictorial issues*

1.*	Eagle displayed: no border	Lozengy field	London	M, MOL (2143)
2.*	Chequered field	Lozengy field	London	M

These are made of the same metal as contemporary pilgrimage ampullae (results to be published). No subsequent tokens have been recorded in pure tin until the late fifteenth century.

B) *Pewter pictorial issues*

3.*	Stag right: tree behind: beaded border	Shepherd right with crook and horn	London	M
4.	similar (diff. mould)	Archer right, drawing bow	London	N
5.	Armoured knight w. rectangular helmet, on horseback right: beaded border	Man drinking from cup	London	N

This group of tokens was continued as the major series of English pictorial tokens – the 'Beaded Border' pictorial issues of the next period.

C) *Pewter inscribed issues*

6.*	Crowned bust, marginal pseudo-legend	Expanding cross in circle	London	M

The subsidiary series represented by this issue was continued by a group of late thirteenth-century inscribed tokens ('Amor vincit omnia' around crowned bust: *vide infra*).

Analysis of prototype circular tokens:

Type	Weight gm	Diameter mm	Thickness	Condition	Design Axes	Tin (%)	Lead (%)	Other	Provenance
1	2.00	21	–	D	–	99+	tr		Billingsgate
	2.23	21	1.00	H	–	99+	tr		Swan Lane
2	1.45	18	1.00	G	–	95+	tr	Cu c.5%	Billingsgate
3	1.86	19	0.88	G	6	64.3	35.7		Bull Wharf
4	1.82	19	–	G	7	62.0	38.0		Bull Wharf
5	2.02	19	–	G	12	61.0	39.0		Swan Pier
6	1.50	17	1.00	G	11	60.8	37.2	Cu c.5%	City Bank

The presence of a significant amount of copper is sometimes observed. It is probably original – for instance, if the tin had been obtained from scrap bronze – except in cases where equal amounts of copper and iron are observed; the copper-iron complex being considered due to absorption of corrosion complex into the body of the pewter. The presence of copper (alone) in tokens is not restricted to findspots along any particular stretch of the river bank.

C) BEADED BORDER PICTORIAL TOKENS
(Plates 1-2)

Provenance: London (mainly); Paris (2 tokens); ?Scotland (mould: cf. WTS, p. 448)

Chronology: c.1200–50

1. found with short cross pennies at several sites along the Thames foreshore
2. found in earlier strata than short cross pennies at some Thames sites
3. found in early thirteenth-century strata at Swan Lane and Billingsgate excavations
4. found with main series pictorial tokens (late thirteenth century) at several sites along the Thames foreshore, including Bull Wharf and Billingsgate
5. recovered with short cross pence in the Billingsgate excavations (MOL)
6. recovered with long cross pence in the Swan Lane excavations (MOL)

Metal: Pewter (eutectic mixture)

Shape and size: circular disc tokens, thicker and broader than tokens of the main pictorial series

Types: (pictorial design enclosed by a *beaded border* on the obverse and a more standardised reverse design without beaded border. Later tokens are smaller and have a linear circle around the obverse design)

1.	Bishop type	T	Shield chequy	London	M
2.*	similar	A	Letter 'A' plus small cross	London	M
3.	similar	A plus cross	Expanding cross	London	RS (xvi, 1 = W29)
4.	similar	H. . .	Plain	London	M
5.*	similar	no legend	Shield (field chequy)	London	M
6.	similar		Rose (6 petals)	London	M

7.	similar	(crozier inverted)	Expanding cross (concave)	London	M
8.	similar	(crozier everted)	Expanding cross (concave)	London	M

(on beaded border tokens the Bishop [T – Thomas à Becket]is shown half-length and his mitre is bifid: cf. later tokens of the main pictorial series)

9.*	Winged Angel half length facing	Lis (field chequy)	London	M
10.	Angel stg. facing, with trees on right	Pilgrim right (half length)	London	M
11.*	King's bust facing: sceptre each side	Pilgrim left (half length)	London	M
12.	similar	Quartered square	London	RS (xvi, 2 = W16)
13.	King's bust facing	Lis (field chequy)	Paris	F (p. 115)
14.*	Two pilgrims right (1 large, 1 small)	Rose cross (8 petals)	London	M
15.	Pilgrim right	Star (6 points)	London	M
16.*	Pilgrim's head right (field chequy)	Field chequy	London	M
17.*	Stag right	Flower (6 foil)	London	M
18.*	Lion right	Shield barry (6.6)	London	M
19.*	Pelican right; head reverted	4 crescents forming a cross	London	M
20.	similar	Expanding cross (concave)	London	M
21.*	Pelican left; head reverted	Letter 'R' plus small cross	London	M
22.	similar	Shield chevronny (3.4)	London	M
23.	similar	Lis (field chequy)	London	M
24.*	Double headed eagle displayed	Letter 'A'	London	M
25.	similar	Straight cross: ray border	London	M
26.	similar	Shield chevronny (3.4)	London	M
27.	similar	Norman style building	Paris	F (p. 68)
28.*	Pair of fighting cocks	Lis (field chequy)	London	M
29.	Fox right; bird above and below	Letter 'A' plus small 'e'	London	RS (xvi, 11 = W15)
30.	Lis (field chequy)	Expanding cross (straight): ray border	London	M
31.	Lis (field chequy)	Norman style building	London	M
32.	Open cross, everted ends (linear border)	Norman style building	London	MOL (374)
33.	Lozengy field	Plain	London	M

NB. Scotland: 6-token mould from Dundrennan Abbey, Kirkudbrightshire (cf. WTS p. 448) Lis – King's head – Pilgrim's heads – Pelican – 2 stg. figures – x (provisionally considered contemporary with the beaded border tokens)

Analysis of beaded border tokens:

Type	Weight gm	Diameter mm	Thickness mm	Condition	Design Axes	Tin (%)	Lead (%)	Provenance
1	0.83	18	0.62	H	12			Bull Wharf
2	1.10	19	0.58	G	3	62.8	37.2	Billingsgate
4	0.20	–	0.62	1/4 (cut)	–			Bull Wharf
5	1.40	18	0.70	G	12	57.4	42.6	Bull Wharf
6	1.10	18	0.62	G	–	63.0	37.0	Bull Wharf
7	1.64	18	1.1	W	11	52.6	47.4	Swan Stairs
8	0.52	17+	0.75	1/2 (cut)	11	51.1	48.9	City Bank
9	1.05	18	0.70	D	12	61.2	38.8	Bull Wharf
10	1.64	18½	0.88	W	12	60.3	39.7	Bull Wharf
11	1.15	18	0.62	G	12	65.9	34.1	Bull Wharf
14	0.81	19	0.80	D	–	70.1	29.9	Bull Wharf
15	0.45	17+	0.58	1/2 (cut)	–	60.8	39.2	Bull Wharf
16	0.85	18	–	D	–	60.0	40.0	City Bank
17	0.82	17½	0.48	G	–	65.0*	31.0	Bull Wharf
18	0.96	18	0.55	G	6	61.2	38.8	Billingsgate
19	0.83	18	–	G	11			Bull Wharf
20	0.85	17	0.65	G	12	62.8	37.2	Bull Wharf
21	1.06	18	0.62	G	2			Bull Wharf
22	0.80	18	0.50	D	12	60.9	39.1	Swan Stairs
23	0.78	17	0.88	H	2	66.9	33.1	Bull Wharf
24	1.08	18	0.82	G	7	66.3	33.7	Bull Wharf
25	1.05	18	0.62	G	12			Bull Wharf
26	1.20	18	0.62	W	6	62.5	37.5	City Bank
28	0.86	18	0.62	H	12	65.8	34.2	Bull Wharf
30	1.71	20	–	G	–	60.0	40.0	London
31	0.95	18	0.65	W	–	64.0	36.0	City Bank
32	1.40	20	0.65	W	–	59.5	40.5	Swan Lane
33	0.56	12	0.92	W	–	64.5	35.5	Bull Wharf

*The token of type 17 also contains Cu c.4%.

Weight: (in good condition)	1.04 gm	(SD 0.17: n = 11)
Diameter:	17.95 mm	(SD 0.47: n = 11)
Thickness:	0.69 mm	(SD 0.15: n = 24)
Tin (%):	62.15%	(SD 4.46: n = 22)

NB. Two cut-half tokens and one cut-quarter token: cf. making cut-halfpenny and farthings from silver pennies. Some worn tokens are thicker and heavier (1.64, 1.64, 1.20 gm) than normal: see discussion following analysis of Main Series pictorial tokens.

D) PICTORIAL TOKENS: THE MAIN SERIES (Winetavern tokens; London Wall tokens – named after the two main published hoards: 1971, 1845)
(Plates 2-5)

Provenance: London (most); Dublin (WTS); Boston (Lincs.: cf. TR p. 100); Paris (F). All of the Dublin types are known from mould replicates found in London and the same applies to one of the two Paris types.

Chronology: Henry III to Edward I (c.1250–1307)

1. found mainly with short cross and long cross pennies (both demonetised 1280), and also with pennies of Edward I; but not with later coins. These comments apply to many sites along the Thames foreshore and also to the MOL excavations at Swan Lane
2. dated to the third quarter of the thirteenth century; Winetavern Street (Dublin) hoard
3. recovered from a stratum of c.1250–75 at Trig Lane (TR61 = WTS12) excavations
4. not uncommonly found with beaded border pictorial tokens; but very rarely found alongside any of the Late pictorial tokens (*infra*). These comments also apply to several Thames foreshore sites, including Bull Wharf.

Circulation of these tokens during the second half of the thirteenth century is clearly attested by extant evidence, just as is circulation of their 'beaded border' predecessors during the second quarter of the same century, and circulation of their smaller pewter and lead derivatives (Late pictorial) during the first half of the fourteenth century. The best chronological assessment on the basis of present evidence is from the mid-thirteenth century until the end of Edward I's reign: c.1250–1307. Edward I died in 1307 and the year 1307 also marks the first recorded citations of English secular pewterers in London. The rapid development of the London secular pewter industry at this period was significant. The date 1307 is not a precise index, but it is used as a marker highlighting a significant period of rapid change. When pictorial tokens of the main series came into use there was significant usage of the older beaded border issues alongside them, but at the other end of the time scale there was negligible use of these main series pictorial tokens alongside their poorer quality derivatives.

Metal: Pewter (eutectic mixture)

Shape and size: Circular disc tokens. Along with some sewn tokens (*supra*) these are the thinnest of all English tokens, and they are also about the most finely executed specimens.

Designs: The designs used on pictorial tokens are more decorative than informative. Such designs as the bishop and the pilgrim evoke thoughts of the Canterbury pilgrimage to St Thomas and, as discussed above, many of these tokens were probably made under ecclesiastical authority for the use of pilgrims. Many other designs are common heraldic emblems that should probably not be given any specific interpretations. Although one can identify shields that enjoyed specific meanings in other contexts (e.g. St George: Fitz-walter of London), it should be remembered that heraldic shield forms were often combined as purely decorative designs; for instance, six different forms of heraldic shield combined on the side leaf of a small pewter triptych (MBM), or a like number in the arcading around a small pilgrim's ampulla (MBM). It is probably true to say that personal shields (like merchants marks and personal emblems) only began to make their appearance on English tokens in the fifteenth century. The pictures on the early tokens appear to be more in the nature of stock designs used for their decorative, educational and inspirational effect.

Types: (pictorial design enclosed by a *linear border* on the obverse; a more standard design on the reverse)

A) *Large size (21 mm; 3½ gm)*

1.*	Lis (field chequy)	Shield bendy (4.4)	London	M

B) *Normal size (15½–16 mm; ¾ gm)*

2.	Bishop seated (crozier right)	Straight cross (field chequy)	London	M
3.	similar	Straight cross in border	London	LW9a; RS3; W8

D) PICTORIAL TOKENS: MAIN SERIES (*Cont.*)

4.*	similar	Expanding cross (concave)	London	M
			Dublin	WTS6 ('celtic')
5.	similar	Rose cross (8 petals)	London	Mx2
			Dublin	WTS7
6.	similar	Whorl (11 arms)	London	RS4; W9; N
7.	similar	Field chequy	London	M
8.*	Bishop seated (crozier left)	Expanding cross (concave)	London	M
	(the Bishop is now shown seated and with a single-peaked mitre: cf. beaded border tokens)			
9.	King's bust facing: superimposed 'H'	Whorl (12 arms)	London	N
	(cf. earlier 'king's bust and 2 sceptres design' – beaded border issue – upon which this is based)			
10.*	Pilgrim right (no cup)	Shield quarterly	London	M
11.	Pilgrim right (with cup)	Shield party per chevron	London	Mx2; N
12.*	similar	Letter 'A'	London	Mx4
			Dublin	WTS26
13.	similar	Straight cross (voided)	London	M
14.*	similar	Expanding cross (convex)	London	M
15.	similar	Tree (?)	London	M
16.*	Pilgrim left (purse at side)	Shield bendy (5.4)	London	LW5b; Mx3
			Dublin	WTS25
17.*	similar	Corded cross	London	LW5a; RS6; W24; CY37; M; N
			Paris	F (p. 135)
18.*	Pilgrim left (no purse)	Rose cross (8 petals)	London	M
19.	Head of pilgrim + small head	Cross fleury	London	LW3; M
20.*	Bust of Monk left	Star (5 points)	London	M
21.	similar	Shield barry (4.3)	London	M
22.*	Stag right (plant below)	Shield barry (4.3)	London	Mx5
23.*	Stag right (arrow above)	Expanding cross (straight)	London	RS12; Mx2
			Dublin	WTS28
24.	similar	Field barry	London	M
25.*	Stag left (arrow above)	Shield chevronny (4.3)	London	LW1; CY38; W27; M
26.	similar	Shield barry (4.3)	London	M
27.	similar	Celtic cross	London	N
28.*	Paschal lamb left (standard with cross)	Shield chevronny (4.3)	London	Mx2
29.	similar	Expanding cross (straight)	London	CAxi; Mx2
30.	similar	Field chequy	London	RS5; W1
31.*	Pascal lamb right (standard with cross)	Expanding cross (concave)	London	M
32.	similar	Expanding cross (straight)	London	M
			Dublin	WTS2
33.	similar	Straight cross (field chequy)	London	M
			Dublin	WTS3
34.*	Bear seated right, eating apple (bare head)	Straight cross and annulets	London	M; N
			Dublin	WTS5 ('ape')
35.*	similar; but wearing cap	Straight cross and dots	London	M
36.*	Bear standing left, eating apple (wearing cap)	Shield chevronny (4.4)	London	M
			Dublin	WTS4 ('ape')
37.*	Lion walking left (field chequy)	Shield chequy	London	LW2; W18; Mx5
38.*	Lion walking left (field void)	Field chequy	London	M
39.*	Lion walking right (field chequy)	Straight cross (field lozengy)	London	M
40.*	Pair of lions rampant	Shield party per bar: chevron above and below	London	Mx2
41.*	Pelican right; long reverted neck	Shield chevronny (3.3)	London	Mx4
			Dublin	WTS23
42.*	similar	Field chequy	London	Mx2
			Dublin	WTS22
43.*	Pelican left; long reverted neck	Shield chevronny (4.3)	London	LW7a; RS8; W21; Mx2
44.	Pelican right; short reverted neck	Letter 'A'	London	M
45.*	Pelican left; short reverted neck	Straight cross (field chequy)	London	Mx4
46.*	Double headed eagle displayed (no legs)	Shield barry (4.3)	London	LW4a; RS7; W13; Mx4

47.*	Double headed eagle displayed (with legs)	Field chequy	London	Mx3
48.	similar	Field lozengy	London	LW4b; M
			Dublin	WTS11
49.	similar	Straight cross (field lozengy)	London	Mx2
50.	similar (legs and long neck both barry)	Shield quarterly	London	M
51.	similar	Shield barry (4.4)	London	TR61; M
			Dublin	WTS12
52–54.	similar	Star in cresent	London	Mx3 varieties
55.*	Cock walking left	Letter 'A'	London	Mx2
56.	Pair of fighting cocks (bare heads)	Lis (field chequy)	London	M
57.*	similar	Rose cross (8 petals)	London	LW8; RS9; W30; Mx5
58.	similar	Celtic cross	London	Mx2
59.	similar	Cross and dots	London	M
60.	similar (feathered heads)	Straight cross (field chequy)	London	Mx2
			Dublin	WTS31
61.*	similar	Straight cross (field void)	London	M
62.	similar	Expanding cross (convex)	London	M
63.	similar	Seven-foil (field chequy)	London	M
64.	similar	Six-foil: marginal decoration	London	M
65.	similar	Shield quarterly	London	M
			Dublin	WTS32
66.*	Lis (field void)	Whorl (9 arms)	London	M
67.	Lis (field chequy)	Rose cross (8 petals)	London	LW6; W14; Mx2
68.	similar	Straight cross	London	Mx2
69.	Shield quarterly ('+')	Plain	London	Mx2
			Dublin	WTS34
70.	Shield quarterly ('x')	Celtic cross	London	M
71.	Shield bendy (3.3)	Letter 'A'	London	Mx3
72.	Shield bendy (3.4)	Six-foil (field chequy)	Paris	F (p. 34)
73.	Shield quartered by voided cross	Straight cross	London	M
74.	Sheild barry (3.4)	Field chequy	London	Mx2
75.	similar	Field blank	London	M
			Dublin	WTS33
76.	Shield chevronny (3.3)	Field lozengy	London	M
77.	Straight cross (field void)	Straight cross	London	M
78.	Straight cross (field chequy)	Field chequy	London	M
79.	Expanding cross (concave)	Field barry (4.3)	London	M
80.	similar	Field chequy	London	M
81.	similar	Field lozengy	London	M
82.	similar	Field blank	London	M
83.	Field chequy	Field fine chequy	London	M
84.	Field voided: marginal rim, central dot	As obverse	SE England	M

NB. Pilgrim left/Corded cross; the following are mould replicates:
London: LW5a; M (Swan Pier foreshore); N (Bull Wharf)
Paris: F (p. 135: Pont de l'Archeveche 1860)
Pilgrim left/shield bendy; the following are mould replicates:
London: LW5b; M (Swan Pier foreshore; Bull Wharf)
Dublin: WTS(25)
The great majority of tokens in this series that are listed here as belonging to the same type are also mould replicates.

Analysis of pictorial tokens in the main series:

Type	Weight gm	Diameter mm	Thickness mm	Condition	Design Axes	Tin (%)	Lead (%)	Provenance
A) *Large size*								
1	3.45	21	1.05	G	12	59.7	40.3	Queenhithe
B) *Normal size*								
2	0.75	16	0.88	D	1	61.5	38.5	Bull Wharf
4	0.78	15	–	G	1			Bull Wharf
5	0.80	16	–	G	–			Bull Wharf
	0.84	16	0.58	G	–	60.0	40.0	City Bank

D) PICTORIAL TOKENS: MAIN SERIES (*Cont.*)

	6	0.60	16	–	G	–			Bull Wharf
	7	0.62	15	–	G	–			Bull Wharf
	8	0.79	15	–	G	2			Billingsgate
	9	0.61	16½	–	G	–			Bull Wharf
	10	0.65	16½	0.45	G	12	60.3	39.7	Bull Wharf
	11	0.80	16	–	W	12			City Bank
		0.75	17	–	W	12			City Bank
		0.67	16	–	G	12			Bull Wharf
	12	0.60	16	0.45	G	1	63.8	36.2	Swan Stairs
		0.55	16	0.60	D	1	61.8	38.2	Swan Stairs
		0.59	15½	0.42	G	1	59.3	40.7	Bull Wharf
		0.46	14	0.78	W	1	64.0	36.0	Billingsgate
	13	0.62	16	–	G	12			Bull Wharf
	14	0.62	16	0.55	G	12	60.3	39.7	Billingsgate
	15	0.34	15	–	D	3	47.6	52.4	City Bank
	16	0.80	16	0.42	G	1	58.0	42.0	Billingsgate
		0.62	16	0.42	G	1	62.7	37.3	Bull Wharf
		0.66	15½	–	D	1			City Bank
	17	0.63	15	0.62	G	11	62.0	38.0	Billingsgate
		0.71	16	–	G	11			Bull Wharf
	18	0.74	16	–	G	–			City Bank
	19	1.02	16	–	W	12			City Bank
	20	0.87	16	–	G	1			Bull Wharf
	21	0.58	16	0.42	W	12	62.0	38.0	Bull Wharf
	22	0.75	16	–	G	11			Billingsgate
		0.70	16	–	G	11			Bull Wharf
		0.73	16	–	G	11			Swan Stairs
		0.70	15½	0.62	G	11	62.5	37.5	Billingsgate
	23	0.56	15½	–	G	1			Bull Wharf
		0.55	15½	–	G	1			City Bank
	24	0.34	16	–	D	10			Billingsgate
	25	0.70	16	0.62	G	8	60.8	39.2	City Bank
	26	0.47	15	–	G	2			Bull Wharf
	27	0.71	15	–	G	2			Bull Wharf
	28	0.80	16	0.58	G	2	61.5	38.5	Billingsgate
		0.79	16	0.52	G	2	60.8	38.2	Bull Wharf
	29	0.72	16	0.68	D	1	62.7	37.3	City Bank
		0.95	15	0.88	W	1	65.6	34.4	Bankside
	31	0.71	16	–	G	12			Billingsgate
	32	0.70	16	–	G	–			City Bank
	33	0.90	16	0.72	G	12	56.9	43.1	Billingsgate
	34	0.68	16	0.60	G	12	56.5	43.5	Swan Stairs
		0.64	16	–	G	12			Bull Wharf
	35	0.77	16	0.55	G	1			Billingsgate
	36	0.72	16	0.38	G	2	63.5	36.5	Bull Wharf
	37	0.65	16	–	G	10			Billingsgate
		0.64	16	0.68	G	10	62.0	38.0	Billingsgate
		0.74	16	–	G	10			Billingsgate
		0.66	16	–	W	10			Bull Wharf
		0.68	16	–	W	10			City Bank
	38	0.70	16	0.50	G	–	68.2	31.8	Bull Wharf
	39	0.64	15	0.48	H	12	64.5	35.5	Bull Wharf
	40	0.65	16	–	G	12			Billingsgate
		0.69	15½	0.58	G	12	61.8	38.2	Billingsgate
	41	0.70	16	–	G	9			City Bank
		0.69	16	0.38	G	9	59.2	40.8	Swan Stairs
		0.55	16	–	W	9			City Bank
		0.35	16	–	1/2	9			Billingsgate
	42	0.62	15	0.60	G	–	63.4	36.6	Bull Wharf
		0.65	15½	–	G				Swan Stairs
	43	0.75	16	0.62	G	8			Aldersgate 1845
		0.75	16	0.45	G	8	63.1	36.9	Swan Stairs
	44	0.76	16	0.50	G	8	53.4	46.6	Swan Stairs
	45	0.80	16	0.62	G	2	61.8	38.2	Billingsgate
		0.73	16	0.68	G	2	60.5	39.5	Swan Stairs
		0.83	16	–	W	2			City Bank
		0.77	15½	–	W	2			City Bank

46	0.78	16	0.75	G	6	60.0	40.0	Billingsgate
	0.77	16	–	G	6			Billingsgate
	0.77	16	–	G	6			Billingsgate
	0.78	16	0.60	G	6			Billingsgate
47	0.84	15½	–	G	–			Billingsgate
	0.85	15½	–	G	–			Billingsgate
	0.79	15½	–	G	–			City Bank
48	0.63	16	–	G	–			Bull Wharf
49	0.80	16	0.68	G	1	60.0	40.0	Bull Wharf
	0.80	16	–	G	1			City Bank
50	0.75	15½	0.78	G	11	62.4	34.6	Bull Wharf
51	0.60	15½	–	W	12			Bull Wharf
52	0.65	15½	–	G	5			Bull Wharf
53	0.67	15	–	G	6			Queenhithe
54	0.70	15	0.62	G	7	58.5	41.5	Bull Wharf
55	0.77	15½	0.48	G	2	60.2	39.8	Billingsgate
	0.77	16	–	G	2			Billingsgate
56	0.68	16	–	H	12			Bull Wharf
57	0.85	16	0.80	G	12	60.6	39.4	Billingsgate
	0.90	16	–	G	12			Bull Wharf
	0.83	16	–	G	12			Billingsgate
	0.84	16	0.80	G	12	59.2	40.8	Aldersgate 1845
	0.85	16	–	G	12			Queenhithe
58	0.80	15½	–	G	1	63.0	37.0	Bull Wharf
	0.78	15½	–	G	1			Billingsgate
59	0.93	16½	–	G	12			Bull Wharf
60	0.62	15½	–	G	1			Swan Stairs
	0.57	16	–	D	1			Bull Wharf
61	0.49	15½	–	G	12			Billingsgate
62	0.60	16	–	G	2			Bull Wharf
63	0.63	16	–	G	–			Billingsgate
64	0.60	15½	0.52	D	12	62.7	37.3	Bull Wharf
65	0.55	15	–	W	12	62.5	37.3	City Bank
66	0.56	15	0.45	G	–	62.8	34.2	Bull Wharf
67	0.73	16	0.88	G	–	63.0	37.0	Billingsgate
	0.75	16	–	G	–			Billingsgate
68	0.97	15	–	G	12			Bull Wharf
	0.70	15	–	G	12	62.4	37.6	City Bank
69	0.75	16	–	G	–	62.3	37.7	Bull Wharf
	0.71	16	–	G	–			City Bank
70	0.55	15	–	W	12	59.8	40.2	Bull Wharf
71	0.64	15	–	G	12	58.7	41.3	Bull Wharf
	0.64	14½	–	W	12	69.9	30.1	Bankside
	1.05	15	–	W	12			Putney
73	0.70	14½	–	G	11	59.3	40.7	City Bank
74	0.76	15	–	G				Bull Wharf
	0.71	15	–	G				Queenhithe
75	0.57	14	–	W	–	65.5	34.5	Bull Wharf
76	0.70	15	–	W	–	61.1	38.9	Bull Wharf
77	0.79	16	–	G	12	56.9	43.1	Billingsgate
78	0.53	14½	–	H	–	58.2	41.8	Bull Wharf
79	0.72	15	–	G	12	62.3	37.7	Southwark
80	0.69	15	–	G	–			City Bank
81	0.69	15	0.62	G				City Bank
82	0.72	14	0.90	W	–	66.4	33.6	City Bank
83	0.64	15	0.60	G	–	59.7	40.3	City Bank
84	0.99	17½	–	G	–	56.9	43.1	uncertain

Weight: (in good condition)	0.72 gm	(SD 0.10: n = 98)
Diameter: (15½–16 mm)	15.73 mm	(SD 0.47: n = 98)
Thickness:	0.60 mm	(SD 0.14: n = 47)
Tin (%):	61.12%	(SD 3.33: n = 59)

NB. Some worn tokens are thicker and heavier than the normal range (cf. beaded border tokens).

It is noticeable that the diameter of the tokens is much more consistent than their weight and thickness. This is particularly true when one looks at mould replicate tokens. Having been cast in the same mould the replicates have the same diameter (unless either damaged, or possessing casting sprues) but the weight

D) PICTORIAL TOKENS: MAIN SERIES (*Cont.*)

and thickness may each vary quite widely; for instance, the thickness range for type 12, or the weight range for type 71 in which a worn token is substantially heavier than a well preserved specimens. The simple explanation seems to be that when the moulds were tightly clamped during casting a light-weight thin token resulted, but when more loosely clamped the resulting token was thicker and heavier. Over and above such variations due to casting technique, perusal of the figures shows that some varieties of token are consistently thinner and lighter, while other varieties are consistently thicker and heavier; so it also appears valid to conclude that the designs of some stone moulds were engraved to a greater depth than the more superficial engraving of other moulds. Once these variations within the series have been considered one can look to the broader picture and see that the size of these Main Series pictorial tokens occupies an intermediate position in all parameters (diameter, weight, thickness) between the earlier Beaded Border pictorial tokens and subsequent Late Pictorial pewter (groups A.1–2) tokens. The evolutionary progression is clear, though individual figures show some overlap.

E) PICTORIAL TOKENS: SUBSIDIARY SERIES OF THE MAIN PERIOD
(Plate 5)

Provenance: London

Chronology: Henry III to Edward I (c.1250–1307) – contemporary with the Main Series
1. found in a late-thirteenth-century stratum at Billingsgate excavations (MOL: group A)
2. found with a long cross penny (MOL: group A)
3. found with pictorial tokens of the Main Series (group B)

Metal: Pewter (eutectic mixture)

Shape and size: as tokens of the Main Series

Types:

A. *Inscribed series*

1.	Facing crowned bust, marginal legend: AMOR VINCIT OMNIA	Expanding void cross: ray border	London	RS(774); MOL
2.*	similar	Straight cross moline: oblique ray border	London	MOL (x3½)

This group of tokens appears to be successor to the inscribed sub-group of Prototype tokens.

B. *Brothel token*

3.*	Cowled bust right	Male organs	London	M

This is the only early pewter brothel token. Later medieval brothel tokens, particularly of the fifteenth century 'cross and pellets' series have more commonly been found in Paris (F. pp. 260–270) than in London (M x 1). Medieval regulation of the Southwark 'stewes' was discussed by Stow (1603: 1971 edn., vol. 2, pp. 54–55).

Analysis of subsidiary pictorial tokens:

Type	Weight gm	Diameter mm	Thickness mm	Condition	Design Axes	Tin (%)	Lead (%)	Provenance
2	0.90	18	–	D	–	65.0	35.0	Billingsgate (2298)
3	0.55	15	0.38	G	7	61.7	38.3	Bull Wharf

F) PICTORIAL TOKENS: THE LATE SERIES
(Plates 5–8)

Provenance: London (most); Putney (2); Essex (1); Norfolk (1); Paris (3)

Chronology: Edward II to early Edward III (c.1307–50)
1. The principal stratigraphic association of these tokens is with the pre-groat pennies of Edward III. This applies to several Thames foreshore sites, including Bull Wharf and Queenhithe.
2. These tokens are occasionally associated with groats of Edward III (Bull Wharf).
3. The latest issues are occasionally found in later-fourteenth-century strata, as at Trig Lane excavations (TR 65, 69, 73, 78: c.1380).
4. These tokens are nearly always found in later contexts than pictorial tokens of the Main Series at Thames foreshore sites. There is a sharp stratigraphic cut-off between these two classes of tokens.
5. They are usually found in earlier contexts than Geometric tokens at Thames foreshore sites, though there is some overlap.

The date when the Main ('Winetavern') Series of pictorial tokens deteriorated into this Late Series has been assessed as the 'end of Edward I's reign/emergence of a secular pewter industry', c.1307. The dearth of Edward II's coins found alongside pictorial

tokens at Thames foreshore sites precludes more accurate dating. The introduction of the groat by Edward III in 1351 is a reasonably well defined marker for the end of pictorial tokens; though a small number of the later issues were to persist in use during ensuing decades.

Metal: A) Pewter (eutectic mixture)
B) Lead (virtually pure)
Nearly all tokens are made either in the eutectic mixture, which approximates to the quality of pewter defined for 'round-ware' in the 1348 ordinances, or of pure lead.

Shape and size: Circular disc tokens of which the earlier issues in both pewter and lead tend to be as thin as preceding tokens (Main Series); but they have reduced diameters and weights. The later tokens bear generally cruder designs and are more dumpy: that is to say, their thickness is increased and their diameter is variable.

Types: Designs were mainly derived from those of the previous period and initially remained well executed. The traditional designs often received some slight modification, for instance: the Pascal Lamb is now associated with a flag, where before there was a cross. The same change also occurred to the pelican design. Some new pictorial designs were introduced at this time. The 'Humpty Dumpty' style of head first appeared during this period and it continued to feature during the ensuing Geometric phase as a characteristic fourteenth-century design.

A.1. *Pewter issues of better style (Edward II)*

1.	Mitred bishop seated with crozier	Expanding cross (straight)	London	M
2.*	Seated bishop type (formalised)	Blank	London	M
3.*	Pilgrim design left: good style	Shield chevronny (3.2)	London	Mx2
4.	Pilgrim design right: good style	Expanding cross (concave)	London	M
5.	similar	Expanding cross (convex)	London	M
6.	similar	Blank	London	M
7.*	Deer left, arrow above (no antlers)	Shield chequy	London	M
8.*	Pascal lamb right (with flag)	8-armed cross	London	M
9.*	Pelican right, neck reverted (with cross)	Straight cross (field chequy)	London	M
10.	Double headed eagle displayed (no legs)	Six-foil (field chequy)	London	M
11.	Shield chequy	Short straight cross (field chequy)	London	M

A.2. *Pewter issues in poor style (early Edward III)*

12.*	Rude pilgrim design right	Field quarterly	London	M
13.	Deer right on hind legs, browsing tree	3 fishes, head to tail (as triangle)	London	M
14.	Pascal lamb left (with flag)	Six-foil	London	M
15.	Pascal lamb right (with flag)	Square (chequy) within border	London	M
16.	similar (no flag)	Field barry	London	M
17.	Lion right (field chequy)	Expanding cross (convex); ray border	London	M
18.	Double headed eagle displayed	Line border, central dot: no design	London	M
19.*	similar (caricature)	Shield quartered by void cross	London	M
20.	Letter 'A'	Shield (details uncertain)	London	M
21.	Expanding cross (convex)	Voided pentagon	London	M
22.	Expanding cross (concave)	Star (6 points)	London	M
23.	Triangular shield (field chequy)	Straight cross, angles segmented	London	M

B.1. *Lead issues in good style (Edward II)*

24.*	Bishop seated (with cross)	Expanding cross (convex)	London	M
25.*	Mitred (1 peak) bishop's bust facing; (field chequy)	Expanding cross (convex)	SE England	M
26.	similar: plus crozier (field void)	Church building (ray border)	London	M
27.*	Pilgrim's bust right: bird on head	Quatrefoil on straight cross	London	M
28.*	King's crowned bust facing: 'H' superimposed	Shield barry (3.3)	London	Mx2
29.	similar	Shield quarterly	London	M
30.	similar	Bird displayed	London	M

(derived from 'king's bust with two sceptres' design: *vide* beaded border, then main pictorial series)

F) PICTORIAL TOKENS: LATE SERIES (*Cont.*)

31.*	'Humpty Dumpty' king's head facing	Shield quartered by void cross	London	M
32.*	Mitred bishop's bust left (2 peaks)	Crowned king's bust left	London	M
33.*	similar	Eagle displayed	London	Mx3
34.	Crowned king's bust left	Ornate void cross (field chequy)	London	Mx3
35.	similar	Shield (details uncertain)	London	M
36.*	Secular bust left with cap	Shield chevronny (3.4)	London	M
37.	Pilgrim right (traditional form)	Shield chevronny (2.2)	London	M
38.*	similar	Straight cross (field chequy)	London	M
39.	similar	Field chequy	London	M
40.	similar	Eagle displayed	London	M
41.	similar (rude)	Straight cross and crescents	London	M
42.*	Pascal lamb left (with flag)	Expanding cross (concave)	London	Mx4
43.*	similar	Shield bendy (3.2)	London	M
44.	Pelican right, neck reverted (no cross/flag)	Animal type (?)	London	M
45.*	Pelican left, neck reverted (with flag)	Whorl (8 rays)	London	Mx3
46.*	similar	Straight cross (feathered arms)	London	Mx3
47.	similar	Straight cross (chequered arms)	London	Mx6
48.	similar	Eagle displayed	London	M
49.*	Bird left (? pigeon), head reverted	Composite lion (right) – pelican (left)	London	Mx2
50.	Bird left	Whorl (many rays)	Paris	F (p. 161)
51.	similar	Expanding cross (concave)	Paris	F (p. 164)
52.*	Double headed eagle displayed (no legs)	Shield quarterly	London	Mx2
53.	similar	Shield party per diamond	Essex	M
54.	similar	Shield (bar; chevron above and below)	London	M
55.	Shield chequy	Short straight cross (field chequy)	London	M
56.	Shield lozengy	Field lozengy	London	M
57.	Shield party per chevron	Pelican design (?)	London	M
58.	Shield party per inverted chevron	Composite lion (right) – pelican (left)	London	M
59.	Shield bearing a star on crescent	uncertain	SE England	M

B.2. *Lead issues in formalised style (early Edward III: continued use late Edward III)* (average 15 mm diameter)

60.*	Crowned king's bust facing (rude)	Expanding cross (convex)	London	M
61.	similar	Bird left (?)	London	M
62.	similar	'V' shaped shield; letters around	London	M
63.	similar	'Tree on elaborate ground'	London	M
64.	similar	Facing uncrowned bust	London	M
65.*	Grinning 'Humpty Dumpty' face in whorl	Quadruped right	London	TR78; M
66.	similar	'Tree on elaborate ground'	London	Mx4
67.	similar	uncertain, but different	London	M
68.*	similar	Lion right	London	M
69.	similar	Three lions, one above another	London	M
70.	Formal profile head (left; with cap)	Lozenge ornament	London	M
71.	similar (right; and bare)	Shield chequy	London	M
72.	similar (right; with cap)	Expanding cross (convex)	London	M
73.*	Seated bishop type (formalised)	Expanding cross (straight)	London	M
74.	Pilgrim type (right; formalised)	Linear design	Putney	M
75.	similar (left; formalised)	Leaf design	London	M
76.	similar (right; degenerate)	Whorl (many armed)	London	M
77.	Quadruped left (rude)	Linear crossed cross	London	M

78.	Pelican left, neck reverted (formalised)	Expanding cross (straight)	London	M
79.	similar	Chequer (rude)	London	M
80.	Bird left in tree (formalised)	Expanding cross (convex)	London	M
81.*	Bird left	Quatrefoil	London	M
82.*	Bird displayed	Expanding trefoil (straight)	London	M
83.	Double headed eagle displayed	Shield party per chevron	London	M
84.	Bird (?)	Field quarterly	London	TR65
85.	Leaf design	Rude triskeles	London	M
86.	Shield quarterly	uncertain	London	M
87.	Shield with bar	Lines	London	M
88.	Crowned star	Linear design	London	M
89.	Pentagon (field chequy)	uncertain	London	TR63
90.	Chequered square	uncertain	London	TR64
(13 to 15 mm diameter)				
91.	Mitred bishop's head (formalised)	Expanding cross (convex): ray border	London	M
92.*	Lion right (field chequy)	similar	London	M
93.*	Pascal lamb right with flag (formalised)	similar	London	TR69, 73; Mx2
94.	Bird left	similar	London	M
95.*	Eagle displayed (field chequy)	similar	London	M
96.	Shield bendy (3.4)	similar	Paris	F (p. 36)
(A small coherent sub-series of tokens)				
(12 to 14 mm diameter)				
97–99.	Eagle displayed: ray border	Quatrefoil: ray border	London	Mx3 var.
100.*	Bird right: ray border	similar	London	M
101.*	Bird left: ray border	similar	Norfolk	M
102.	Star on crescent: ray border	Trefoil: ray border	London	M
103.	Rectangle design: ray border	Linear design: ray border	London	M
104.	Expanding cross (straight): ray border	Whorl (3 arms): no border	London	M
105.	Circle on 6-arm cross: ray border	Cross design: no border	London	M
106.	Cross and pellets: ray border	Linear design: ray border	London	M
(Another small coherent sub-series of tokens)				

Analysis of pictorial tokens of the Late Series:

Type	Weight gm	Diameter mm	Thickness mm	Condition	Design Axis	Tin (%)	Lead (%)	Provenance
A.1. *Pewter issues: better style*								
1	0.75	15	0.68	G	11	60.0*	35.0	Bull Wharf
2	0.65	15	–	G	–	60.0	40.0	City Bank
3	0.52	14	0.40	G	1	63.0	37.0	City Bank
	0.46	15	–	D	1	57.6	42.4	City Bank
4	0.57	15	0.55	G	12	62 5	32.5	Bull Wharf
5	0.54	15	–	G	1	68.3	31.7	Bull Wharf
6	0.53	15	0.38	G	–	58.7	41.3	City Bank
7	0.60	14½	0.50	G	7	62.8	37.2	Bull Wharf
8	0.65	14	–	G	12	66.9	33.1	Queenhithe
9	0.45	14	–	G	10	64.3	35.7	Bull Wharf
10	0.62	16	–	G	12			Queenhithe
11	0.62	15	–	G	1	58.6	41.4	City Bank
Weight:		(in good condition)		0.59 gm	(SD 0.09: n = 11)			
Diameter:				14.77 mm	(SD 0.61: n = 11)			
Thickness:				0.50 mm	(SD 0.12: n = 5)			
Tin (%)				62.06%	(SD 3.47: n = 11)			
*Contains Cu c. 5%								
A.2. *Pewter issues: poor style*								
12	0.67	15	–	G	11	61.6	38.4	Bull Wharf
13	0.90	16	0.72	W	–	33.9*	65.1	City Bank
14	0.65	16	0.40	W	12	63.4	36.6	Bull Wharf
15	0.55	15	–	G	–	59.7	40.3	Bull Wharf
16	0.47	17	0.35	W	12	66.6	33.4	Bull Wharf
17	0.85	15	0.58	G	2	24.8	75.2	Bull Wharf
18	0.93	15	–	W	–	46.8	53.2	City Bank
19	1.47	17	–	H	12	69.7	30.3	Billingsgate

F) PICTORIAL TOKENS: LATE SERIES (*Cont.*)

20	0.75	15½	0.50	H	–	61.7	38.3	Bull Wharf
21	0.90	15	0.62	G	–	58.2	41.8	City Bank
22	0.88	14	0.94	G	12	66.7	33.3	Bull Wharf
23	1.08	15	–	W	–	51.2	48.8	Queenhithe

Weight:	(in good condition)	0.77 gm	(SD 0.15: n = 5)
Diameter:		14.80 mm	(SD 0.45: n = 5)
Thickness:		0.58 mm	(SD 0.19: n = 7)
Tin (%):	eutectic tokens:	63.45%	(SD 3.92: n = 8)
	'1/2 tin'	49.0%	(SD 3.11: n = 2)
	'1/3 tin'	33.9%	(n = 1)
	'1/4 tin'	24.8%	(n = 1)

*Contains Cu 1%

B.1. *Lead issues: good style*

24	0.78	14	–	G	1	0	100	City Bank
25	1.25	161	0.58	G	1	0	100	uncertain
26	1.05	15½	0.68	G	6	0	100	City Bank
27	1.00	15	0.45	G	12	0	100	Bull Wharf
28	0.80	15	–	G	12	0	100	Bull Wharf
	0.73	14½	–	D	12			City Bank
29	0.92	14½	–	G	12			City Bank
30	0.90	14	–	W	6			City Bank
31	0.69	15	–	G	6			Bull Wharf
32	1.03	15½	–	G	12	0	100	City Bank
33	1.35	15	–	G	12	0	100	Bull Wharf
	1.20	15	–	G	12			City Bank
	1.00	15	–	W	12			City Bank
34	1.12	15½	–	G	12			City Bank
	1.28	15½	–	G	12	0	100	City Bank
	0.80	15	–	W	12			City Bank
35	0.85	14	–	W	–			City Bank
36	1.00	15	0.68	G	12	0	100	Swan Stairs
37	0.95	16	–	W	12	0	100	City Bank
38	0.82	15	–	G	2	0	100	Bull Wharf
39	1.10	15	0.88	W	–	0	100	City Bank
40	0.83	14	–	W	10			Bull Wharf
41	1.47	16	–	H	12	0	100	Bull Wharf
42	1.05	14	–	G	11	0	100	Bull Wharf
	0.62	15	–	G	11			Queenhithe
	0.68	14½	–	H	11	0	100	Queenhithe
	0.68	15	–	W	11			Queenhithe
43	0.83	15	–	G	12	0	100	Bull Wharf
44	0.85	15	–	W	–	0	100	Bull Wharf
45	0.94	15	–	G	–	0	100	Bull Wharf
	0.70	15	–	G	–			Bankside
	0.72	15	–	G	–			City Bank
46	0.90	15	–	G	1			Bull Wharf
	0.82	15	–	G	1	0	100	Queenhithe
	0.78	14	–	W	1			City Bank
47	0.70	14	–	G	12	0	100	Bull Wharf
	0.65	14½	–	D	12			Queenhithe
	0.75	15	–	G	12			City Bank
	0.73	15	–	D	12			Queenhithe
	0.80	15	–	W	12			City Bank
	0.46	15	–	1/2	12			uncertain
48	0.70	15	–	D	6	0	100	City Bank
49	1.11	15	0.68	G	10	0	100	Bull Wharf
	0.87	15	–	W	10			Bull Wharf
52	0.95	14½	0.55	G	11	0	100	Bull Wharf
	0.55	15	–	D	11			Winchester Wharf
53	0.80	15	–	W	11			Essex
54	0.92	14	0.60	H	12	0	100	City Bank
55	0.85	15	–	G	2	0	100	Bull Wharf
56	0.71	14½	0.65	W	–	0	100	City Bank
57	0.55	14	–	D	7	0	100	Queenhithe
58	0.96	15	–	W	12			City Bank
59	0.55	14½	–	W	–			uncertain

Weight;	(in good condition)	0.93 gm	(SD 0.20: n = 27)
Diameter:		14.96 mm	(SD 0.46: n = 27)
Thickness:		0.64 mm	(SD 0.12: n = 9)
Tin (%):	effectively zero	0%	(n = 27)

(see note on tin following B.2 tokens of this period)

B.2. *Lead issues: formalised style*

(average 15 mm diameter)								
60	1.38	15	–	G	12	0	100	City Bank
61	1.06	15	–	W	–			City Bank
62	1.36	16	0.82	G	12	0	100	Queenhithe
63	1.18	16	–	W	4			City Bank
64	1.47	16	–	G	8			Three Cranes Wharf
65	1.10	15½	–	G	9	0	100	Bull Wharf
66	1.12	15	0.72	W	8	0	100	Bull Wharf
	1.04	15	–	W	8	11.5	88.5	City Bank
	1.03	16	–	W	8			City Bank
	1.10	16	–	H	8			City Bank
67	1.10	16	–	W	–			Billingsgate
68	1.12	15	–	G	12	0	100	Bull Wharf
69	1.59	15	–	W	–			Queenhithe
70	1.15	14	–	G	–			Bull Wharf
71	0.85	14	–	W	12			Billingsgate
72	1.39	13½	–	W	1	0	100	City Bank
73	1.50	14	0.92	G	12	0	100	Bull Wharf
74	1.25	16	1.00	W	–	0	100	Putney
75	1.15	14	–	W	–			Bull Wharf
76	1.15	13	–	G	–			Bull Wharf
77	1.38	15	–	W	–			City Bank
78	0.95	14½	–	G	12			Bull Wharf
79	0.91	16	–	W	–			Southwark
80	1.69	15½	–	G	1			Bull Wharf
81	1.26	14	–	G	11	0	100	Bull Wharf
82	1.41	14½	–	G	–	0	100	Bull Wharf
83	0.95	15	0.68	W	12	0	100	Queenhithe
85	1.07	15	–	G	–	0	100	City Bank
86	1.00	15½	–	W				City Bank
87	1.00	15	0.92	D	–	0	100	City Bank
88	0.95	15	–	H	–			City Bank
(13 to 15 mm diameter)								
91	1.08	15	0.65	W	2			Bull Wharf
92	0.99	15	–	G	2	0	100	City Bank
93	1.02	14	–	G	1			Bull Wharf
	1.05	15	0.75	G	1	0	100	Bull Wharf
94	1.03	13½	–	G	12	0	100	Bull Wharf
95	0.92	14	–	H	10			Billingsgate
(12 to 14 mm diameter)								
97	0.88	13	–	D	–			City Bank
98	0.64	13	–	D	–	0	100	City Bank
99	1.33	14	–	W	–			City Bank
100	0.59	12½	–	G	–			Bull Wharf
101	1.06	14	–	W	12	0	100	Walsingham
102	1.10	15	–	G	–			City Bank
103	0.78	14	–	W	–			Bull Wharf
104	0.79	13	–	G	–	0	100	City Bank
105	0.90	12	–	W				Southwark
106	0.84	12	–	G	–	9.6	90.4	City Bank

Weight:	(in good condition)	1.28 gm	(SD 0.21: n = 13) = "15 mm"
		1.02 gm	(SD 0.03: n = 4) = "13–15 mm"
		0.83 gm	(SD 0.21: n = 4) = "12–14 mm"
Diameter:		14.77 mm	(SD 0.88: n = 13) = "15 mm"
		14.38 mm	(SD 0.75: n = 4) = "13–15 mm"
		13.13 mm	(SD 1.32: n = 4) = "12–14 mm"
Thickness:		0.81 mm	(SD 0.13: n = 8)
Tin (%):	effectively zero	0%	(n = 21)

Two tokens showing a small amount of tin probably contain some re-cycled scrap metal. Most lead tokens show zero counts for tin when analysed and are cited as 100 per cent lead, in contrast to 'pure tin' artefacts (tokens and ampullae) which always show a few counts for lead when analysed and are thus cited as tin 99+ per cent, lead trace.

G) THE MID-FOURTEENTH-CENTURY TRANSITIONAL TOKENS
(Plates 8–9)

The pictorial form of token (now made of lead instead of pewter) gave way to the geometric kind of token in the middle of the fourteenth century. During the period of this transition, the years around 1350, several ephemeral groups of tokens were also in use. These transient issues range from unusually high quality pewter tokens down to very crude tokens that were apparently cast from recycled scrap metal. The impetus to change was probably exaggerated by the social and economic upheaval produced by the Black Death.

Provenance: London (most); Paris (2)

Chronology: Edward III (c.1350s)

1. Found alongside coins of Edward III, but not those of other kings. These tokens have been found in association both with Edward III's pre-groat coins and with his groat series. These stratigraphic associations have been noted for tokens of all groups in this transitional series and at several Thames foreshore sites, including Bull Wharf and Queenhithe. Edward III's currency devaluations (1344–53) ensured that his early coins passed out of circulation, so that they are not found in the same Thames strata as his later coins (*vide supra*). The present tokens span this divide which pivots around the introduction of the groat in 135.
2. Tokens from Trig Lane excavations are stratified to c.1380 (TR66) and to the 'late 14th–mid 15th' century (TR67, 68); and a specimen from the very crude series also to the 'late 14th–mid 15th' century (TR60).
3. Preceeding pictorial tokens show sharp curtailment around 1350 and succeeding geometric tokens were well established by c.1360 (*vide infra*). The extent of overlap among the various series has yet to be established.
4. It is considered likely that most of these transitional tokens were made during the 1350s (and possibly 1360s), in the immediate aftermath of the Pestilence. See discussion.

Metal: A. Variable (lead and tin-lead): very crude series
B. Pewter (eutectic mixture): one superior series
C, D. Lead (essentially pure): most tokens

Shape and size: Each series tends to be composed of tokens with a characteristic size, metal composition, range of designs and finesse of execution particular to the individual series.

Types:

A. *Rude series*

Found alongside coins of Edward III (M) and dated to the period 'late 14th–mid 15th century' in Trig Lane excavations (TR60).

1–2.*	Crude voided straight cross	Linear ornamentation	London	Mx2 var.
3–4.	Cross in circle	Circle superimposed on 8-arm cross	London	Mx2 var.
5.	Crossed cross	Crude chequer	London	M
6.*	Linear design	Linear design	London	M
7.	Rude shield (?)	Blank	London	M
8.	Cross in circle: ray border	Linear design	London	TR60

B. *Large size pewter tokens*

Found alongside coins of Edward III and also in deeper strata than geometric tokens: neat superiorly produced tokens of good metal and larger than normal size. These tokens appear to represent a transient attempt at resurrecting pewter emissions; but issue was soon curtailed.

9.*	Shield bendy (4.4): ray border	Field chequy	London	M
10.	Shield chevronny (3.3): ray border	similar	London	M
11.*	Expanding cross (convex)	similar	London	M
12.*	Ornate six-foil: geometric border	Straight cross: geometric border	London	M
13.	similar designs of reduced size		London	M

C. *Lead tokens of large size*

A series of larger than normal tokens made of pure lead and found with coins of Edward III and with other mid-fourteenth-century types of token. The tokens frequently bear a cross on one side and a formalised design, often quartered, on the reverse.

14.	Expanding cross (convex)	Formalised design: ray border	London	M
15.*	Expanding cross (concave)	the same formalised design	London	Mx5
16.	similar	Spear and helmet (field chequy)	London	M

17.	similar	uncertain	London	M
18.*	Windmill cross	Field quarterly	London	M
19.	similar	Rose (8 petals)	London	M
20.	Straight cross (partly chequy)	Field quarterly (half chequy)	London	M
21.	inscription: A/hCIA (first A with bar on top, C reversed, second A with top bar to left only)	similar	SE England	M

D. *Lead tokens of small size*

A series of small, neat compact tokens found with coins of Edward III and in excavated strata at Trig Lane dated to c.1380 and to the 'late 14th–mid 15th century'.

22.*	Formalised facing radiate head	Lion right (outline design)	London	M
23.	similar	Shield with bend (field chequy)	London	M
24.*	similar	Divided square (field chequy)	London	M
25.	similar	Linear cross: ray border	Paris	F (p. 119)
26.	Formalised facing head	Rhomboid with bend (field chequy)	London	TR68; M
27.	similar	Expanding cross (convex: outline)	Paris	F (p. 118)
28.*	Partly radiate facing head	Shield with bend (field chequy)	London	M
29.*	Shield bearing 'A' (field chequy)	Shield with bend (field chequy)	London	Mx2
30.*	Shield bearing scroll (field chequy)	Shield with pale (field chequy)	London	TR67; Mx2
31.*	Shield quarterly (field chequy)	Straight cross (field void)	London	Mx2
32.	Indented rectangle with dots (field chequy)	Rhomboid with bend (field chequy)	London	M
33.	Branched design	similar	London	TR66

Analysis of Transitional tokens:

Type	Weight gm	Diameter mm	Thickness mm	Condition	Design Axes	Tin (%)	Lead (%)	Provenance
A. *Rude group*								
1	1.01	14½	–	G	–	0	100	City Bank
2	0.92	14½	–	H	–	0	100	Bull Wharf
3	0.95	15½	–	W	–	68.3	31.7	City Bank
4	1.83	17	–	H	–	0	100	Queenhithe
5	1.10	15	–	H	–	20	80	City Bank
6	1.19	17	–	H	–	0	100	City Bank
7	0.74	16	–	H	–	13.7	86.3	Bull Wharf
Weight:		(all tokens)		1.11 gm	(SD 0.35: n = 7)			
Diameter:				15.6 mm	(SD 1.07: n = 7)			
Tin (%):		variable			(n = 7)			

Some of these tokens were made from lead, the others apparently from re-cycled scrap metal with a variable tin content.

B. *Large size, neat pewter tokens*								
9	2.65	23	1.12	G	–	62.3	37.7	London Bridge
10	1.75	20	+	G	–	51.9	48.1	Bull Wharf
11	1.30	18	+	G	–	60.0	40.0	Bull Wharf
12	1.86	24	–	G	–	65.0	35.0	City Bank
13	1.18	20	–	G	–	61.4	38.6	City Bank
Diameter:		(in good condition)		ranges from 18 to 24 mm			(n = 5)	
Weight:				ranges from 1.3 to 2.65 gm			(n = 5)	
Tin (%):				60.12%	(SD 4.94: n = 5)			
C. *Large size lead tokens*								
14	1.83	18	+	G	–			Bull Wharf
15	1.81	17½	+	G	–	0	100	Bull Wharf
	1.03	17	0.75	G	–			City Bank
	1.54	17	–	G	–			City Bank
	1.45	17	–	G	–			City Bank
	1.30	17	–	H	–			City Bank
16	1.50	16	+	W	–	0	100	Queenhithe

G) MID-FOURTEENTH-CENTURY TRANSITIONAL TOKENS (*Cont.*)

17	1.25	15½	–	W	–	0	100	Bull Wharf
18	1.10	17	–	G	12	0	100	Bull Wharf
19	1.00	14	–	W	–			City Bank
20	1.12	15½	+	G	6	0	100	City Bank
21	1.38	15½	+	G	7	0	100	uncertain
Weight:		(in good condition)		1.41 gm	(SD 0.31: n = 8)			
Diameter:				16.81 mm	(SD 0.88: n = 8)			
Tin (%):		effectively zero		0%	(n = 6)			

D. *Small size, neat lead tokens*

22	1.25	13	+	G	12			Bull Wharf
23	1.05	12	+	W	2			City Bank
24	1.05	13	+	D	–	0	100	Bull Wharf
26	1.36	13	–	W	–			Bull Wharf
28	1.19	13	+	H	12	7	93	City Bank
29	1.07	13	+	G	12	0	100	City Bank
	1.30	13	+	G	12	0	100	City Bank
30	1.20	13	+	G	12	0	100	City Bank
	0.85	14	+	G	12			Queenhithe
31	0.82	13	+	G	12	0	100	Bull Wharf
	0.86	13	+	W	12	0	100	Bull Wharf
32	1.09	14	–	D	–			City Bank
Weight:		(in good condition)		1.08 gm	(SD 0.21: n = 6)			
Diameter:				13.17 mm	(SD 0.41: n = 6)			
Tin (%):		effectively zero		0%	(n = 7)			

The low tin content of one token probably represents re-cycled scrap metal.

Thickness: (all groups) some tokens have been individually measured those marked '+' were all checked with a micrometer and confirmed to be at least 0.62 mm thick.

H) GEOMETRIC TOKENS
(Plates 9–10)

Provenance: London

A number of the six-foil designs on London tokens also appear on specimens from Paris (e.g. Forgeais, pp. 173–75) but the other face of the French tokens bears one of several geometric cruciform designs of characteristically French type. The Rose (F, pp. 204–5) and Whorl (F, p. 206) also appear in combination with typical French forms of cruciform design; as does the Expanding Cross (F, pp. 210–11). English and French tokens appear to have evolved in parallel at this period.

Chronology: Edward III to Henry VI (c.1350s–1430s)

1. found with coins of Edward III (post 1351 series) at Bull Wharf and other Thames foreshore sites
2. found with coins of Henry VI at several Thames foreshore sites, including Bankside and Queenhithe
3. found with pilgrim badges of fifteenth-century type at Queenhithe and Bankside
4. buried in higher strata than Pictorial tokens (several Thames foreshore sites including Bull Wharf and Queenhithe; cf. also the Trig Lane excavations)
5. buried in lower strata than 'cross and pellets' tokens (fifteenth century) at several Thames foreshore sites, including Queenhithe, Bankside. The same stratigraphy also applies to the Trig Lane and Swan Lane excavations (MOL).
6. excavated from strata of the late fourteenth to early fifteenth centuries at Trig Lane:- c.1380 (TR70–72); c.1380 (TR76–77); c.1360 (TR79); late fourteenth-mid fifteenth century (TR80–94); c.1440 (TR95–96).

The geometric tokens succeeded the pictorial tokens as dominant series at about the time of the socio-economic upheaval caused by the Black Death (the 1350s) and they were, themselves, replaced by tokens of the 'cross and pellets' series (and other contemporary groups) during the reign of Henry VI: the closest assessment being the 1430s.

Metal: Lead only

Shape and size: With very few exceptions these tokens have a fairly constant diameter and thickness; around 14 to 15 mm and around 1 to 1½ gm.

Types:

A. *Large size tokens*

1.*	Rose (8 petals) in circles: plain border	Six-foil in circle of 6-foils	London	M
2.	Chequer in circles: plain border	13-foil within border	London	M
3.	'A' on chequer in circle: plain border	similar	London	TR72

B. *Main series of tokens*

(with pictorial obverse)

4.	Formal 'Humpty Dumpty' radiate bust	Six-foil (field partly chequy)	London	M
5.	similar	Six-foil (field striate)	London	M
6.*	Formalised face quarter right	Six-foil (field chequy)	London	M
7.	similar	Whorl	London	M
8.	Crowned 'Edwardian' facing bust	12-foil (field void)	London	M
9.*	Doubled headed eagle displayed	Rose (8 petals)	London	Mx2
10.	probably similar	Expanding cross (convex)	London	M
11.	Many branched tree	Six-foil (field linear decor.)	London	TR74
12.*	Lis on chequer in circle: plain border	12-foil (field void)	London	M
13.*	Letter 'A' (letter chequy)	Six-foil (field chequy)	London	M
14.*	Linear star (6 points), 5 central dots	Quatrefoil (field void)	London	M
15.	similar: with central trefoil	Linear design	London	TR75
16.	Star on crescent	Shield barry	London	M
17.*	Ship with sails furled	Star on crescent	London	M
18.*	Ship of different design	Whorl (many arms)	London	M
19.*	Castle gateway	8-armed cross	London	Mx2
20.	similar	Linear design	London	M
21.*	Shield chequy	12-foil (field void)	London	Mx5
22.	similar	Six-foil in hexagon	London	TR81
23.	Shield paly	Quartrefoil	London	Mx2
24.	Shield chequy, more formalised	Six-foil (field chequy)	London	M
25.	Quartered square in outline radiate shield	Rose (8 petals) in circle	London	M

(with geometric obverse: variable size)

Tokens bearing the same designs are normally the same size. In this group some tokens of slightly larger than average size bear designs that also appear in slightly smaller form on tokens of normal module.

26.	(17 mm) Six-foil in dotted circle	Expanding cross (convex)	London	M
27.	(15½ mm) same designs		London	TR76
28.	(14½ mm) same designs		London	M
29.	(17 mm) Six-foil void (annulets betw.)	Six-foil bearing annulets (field void)	London	M
30.	(16 mm) same designs		London	M
31.	(16 mm) Pentagon containing 5 dots, with an ornate frame	uncertain design	London	M
32.	(16 mm) similar design	Six-foil (field striate)	London	TR86
33.*	(14½ mm) same designs as previous		London	Mx2

(common geometric issues)

34.	Expanding cross (concave: field void) = Expanding cross (convex: field chequy) – this alternative description is equally valid	Six-foil (field partly chequy)	London	M
35.*	similar	Six-foil (field chequy)	London	TR77; Mx3
36.	similar	Rose (8 petals)	London	M
37.*	Expanding cross (straight); linear square in field	Small six-foil (field chequy)	London	Mx2
38.	similar: differing in details		London	TR87
39.	Expanding cross (convex: field void)	Rose (8 petals)	London	M
40.	similar	Expanding cross (concave: field void)	London	Mx3
41.	similar	as obverse	London	TR92; Mx2
42.	Straight cross: dot-in-circle each angle	Void cross: dot-in-circle, decor.	London	Mx2
43.	Straight cross: (field void)	as obverse	London	Mx2
44.*	similar	Rose (8 petals bearing dot-in-circle)	London	M

H) GEOMETRIC TOKENS (*Cont.*)

45.	similar	Rose (8 petals bearing dot)	London	M
46.	similar	Six-foil (probably)	London	M
47.	Straight cross (cross + field void)	Square: obliquely quartered	London	M
48.*	8-arm Cross (interstitial peripheral rays)	Straight cross fleury (field void)	London	TR83; Mx2
49.	similar	Rose (8 petals with dots): plain border	London	M
50.*	similar	Six-foil (field partly chequy)	London	M
51.	Rose (8 petals)	Six-foil (peripheral field chequy)	London	TR85; Mx3
52.	similar	8-foil (field void)	London	TR71
53.	Rose (8 petals bearing dot)	Ornate octagonal design	London	Mx2
54.	Rose (8 petals bearing circle)	as obverse	London	M
55.	13-rayed design with peripheral dots	Asymmetric floral design	London	M
56.	similar	Multifoil	London	M
57.	similar	uncertain	London	M
58.	Ornate octagonal design	Six-foil (field void: ray border)	London	M
59.	similar	4-foil void upon 8-foil chequy	London	M
60.	comparable	uncertain linear design	London	M
61.	Six-foil void (field ornate)	Field lozengy	London	M
62.*	similar (ornament differs)	9-petalled ornament	London	TR70; M
63.	Six-foil void (field chequy)	8-foil (tips ornate)	London	M
64.	similar	as obverse	London	TR93–4; Mx3
65.	Six-foil void (field ornate)	5-foil (field probably void)	London	M
66.	Six-foil void (field linear decoration)	8-foil (field chequy)	London	M
67.	similar	12-foil (field void)	London	M
68.	Six-foil void (triple dots between)	similar	London	M
69.	similar (small dots between)	similar	London	M
70.	Six-foil chequy (field void)	Wheel ornament	London	M
71.	Six-foil void (dots between)	Linear design based on cross	London	M
72.	similar	related design	London	M
73.	Six-foil chequy (field void)	similar	London	TR79
74.	similar	Linear design ('cross on square')	London	M
75.	Six-foil void (field void)	similar	London	M
76.	similar	Linear design ('square on square')	London	M
77.*	16-spoked wheel	Six-foil (field chequy)	London	TR88; Mx3
78.	similar	Six-foil (triple dots between)	London	Mx5
79.	similar	as obverse	London	TR84; Mx3
80.	Whorl (19 arms)	Six-foil void (field ornate)	London	M
81.	similar (25 arms)	5-arm symmetric design (chequy)	London	Mx2
82.	similar (35 arms)	Rose (8 petals)	London	TR91; M
83.	similar (12 arms)	Linear design based on chequer	London	M
84.	similar (many arms)	as obverse (27 and 30 arms)	London	M
85.	similar (many arms)		London	TR89; Mx3
86.*	similar (smaller field)		London	Mx3
87.	Striate quartering ('Mill-wheel')	Six-foil chequy (field void)	London	Mx2
88.	similar	Six-foil chequy (triple dots between)	London	Mx2
89.	similar	Six-foil void (field chequy)	London	M
90.	similar	Six-foil void (field void)	London	TR82
91.	similar	Straight cross fleury	London	M
92.	similar (coarse)	Straight cross chequy	London	M
93.	similar (normal style)	uncertain	London	TR80
94.	similar (neat: large field)	as obverse	London	M
95.	similar (neat: small field)	as obverse	London	Mx3

96.* similar (as previous)	as obverse: but design reversed	London		M
97. similar (coarse)	as obverse	London		M
98. Angled quartering	uncertain	London		M
99. Quatrefoil (field void)	5-pointed linear star	London		M
100. similar	similar	London		TR95
101. similar	Formalised quadruped right	London		M
102. similar	Formalised head	London		M
103. similar	Rose on shield (?)	London		M
104. similar	Six-foil (field chequy)	London		M
105. similar	Crossed chequers	London		M
106. similar	Striate quartering ('Mill-wheel')	London		Mx2
107. similar	similar: but design reversed	London		Mx3
108. similar	uncertain	London		TR96; Mx2

Analysis of Geometric tokens:

Type	Weight gm	Diameter mm	Thickness mm	Condition	Design Axes	Tin (%)	Lead (%)	Provenance
A. *Large size tokens*								
1	2.12	20	–	G	–	0	100	Bull Wharf
2	1.56	21	–	G	–			City Bank
B. *Main series of tokens*								
(pictorial obverse)								
4	1.35	15	–	G	12	0	100	Bull Wharf
5	1.20	16	–	G	1			Bull Wharf
6	0.88	13	–	G	12			Bull Wharf
7	0.75	14	–	G	–	0	100	Bull Wharf
8	1.53	14½	–	G	–			Bull Wharf
9	1.05	16	–	G	–			Bull Wharf
	1.00	16	–	W	–			Billingsgate
10	1.16	16	–	W	2			Billingsgate
12	1.07	14	–	G	–			Bull Wharf
13	1.59	15½	–	G	12			Bull Wharf
14	1.31	16	–	G	–	0	100	City Bank
16	1.28	14½	–	G	12			Bull Wharf
17	1.19	14½	–	G	11			Bull Wharf
18	1.15	15½	–	G	–	0	100	Bull Wharf
19	0.90	13½	–	G	–			Bull Wharf
	0.90	14	–	W	–			Bull Wharf
20	0.82	14	–	H	–			City Bank
21	1.16	15	–	G	–	0	100	Bull Wharf
	0.98	14½	–	G	–	0	100	Queenhithe
	1.24	15	–	G	–			City Bank
	1.25	15	–	W	–			City Bank
	1.05	15	–	W	–			City Bank
23	1.15	14½	–	G	10	0	100	City Bank
	0.94	14½	–	G	10	0	100	City Bank
24	1.22	15	–	G	–			City Bank
(variable size)								
26	0.95	17	–	H	–	0	100	Bull Wharf
28	1.13	14½	–	G	–	0	100	Billingsgate
29	1.73	17	–	W	–	0	100	City Bank
30	1.62	16	–	W	–			City Bank
31	1.10	16	–	H	–			City Bank
33	1.09	14½	–	G	–	0	100	City Bank
	0.95	14½	–	G				Queenhithe
(common geometric issues)								
34	1.04	15	–	G	–			City Bank
35	1.10	15	–	G	–			City Bank
	1.24	15	–	G	–			City Bank
	1.21	15	–	G	–	0	100	Bull Wharf
36	1.57	15	–	G	–			uncertain
37	1.20	15	–	G	–	0	100	Bull Wharf
	1.19	14½	–	G	–			City Bank
39	0.70	14	–	D	–			Billingsgate

H) GEOMETRIC TOKENS (*Cont.*)

40	1.10	15	–	G	12	0	100	City Bank
	0.77	14	–	G	12			City Bank
	0.72	14	–	W	12			Bull Wharf
41	0.96	14	–	W	1			City Bank
	1.06	14	–	W	1			City Bank
42	1.04	13½	–	G	12	0	100	Bull Wharf
	1.06	13	–	G	12	0	100	City Bank
43	1.05	13½	–	G	12			City Bank
	1.15	13½	–	G	12			City Bank
44	0.96	13½	–	G	–			City Bank
45	1.20	14	–	W	–			Queenhithe
46	0.90	14	–	W	–			City Bank
47	0.70	12	–	G	–			Billingsgate
48	1.03	14	–	G	–			Bull Wharf
	0.95	15½	–	G	–	0	100	uncertain
49	0.90	14	–	G	–			Bull Wharf
50	1.09	15	–	G	–	0	100	Bull Wharf
51	1.03	15	–	G	–	0	100	City Bank
	1.20	14½	–	G	–			City Bank
	0.73	14	–	W	–			Billingsgate
53	0.81	13	–	G	–			City Bank
	0.95	16	–	W	–			Southwark
54	1.07	14	–	W	–	0	100	Southwark
55	1.06	14	–	G	–			City Bank
56	0.88	14	–	W				City Bank
57	1.05	14½	–	W	–			City Bank
58	1.09	15	–	G	–			Bull Wharf
59	1.18	15	–	W	–			Bull Wharf
60	1.15	13	–	W	–			City Bank
61	1.69	16	–	G	–	0	100	Bull Wharf
62	1.51	15½	–	G	–			Bull Wharf
63	1.05	15	–	G	–			City Bank
64	0.99	14½	–	G	–	0	100	City Bank
	0.85	14½	–	W	–			City Bank
	0.83	14	–	G	–			Swan Stairs
65	0.85	14	–	W	–			Bankside
66	1.20	14	–	G	–			City Bank
67	1.32	15	–	G	–	0	100	City Bank
68	1.05	15	–	H	–			City Bank
69	1.03	15	–	H	–			City Bank
70	1.06	15	–	W	–			City Bank
71	1.25	15	–	W	–			City Bank
72	1.16	15	–	H	–			Billingsgate
74	1.05	14½	–	G	–			City Bank
75	1.24	14	–	G	–	0	100	City Bank
76	1.23	13½	–	G	–	0	100	Bull Wharf
77	1.19	15	–	G	–	0	100	Bull Wharf
	1.14	15	–	G	–			City Bank
	1.00	15	–	W	–			City Bank
78	0.90	14	–	G	–	0	100	City Bank
	0.72	14½	–	G	–			City Bank
	0.73	14	–	G	–			City Bank
	0.80	14	–	G	–			City Bank
	1.00	14½	–	W	–			City Bank
79	0.98	13½	–	G	–			City Bank
	0.79	14	–	W	–			uncertain
	0.89	13½	–	G	–			City Bank
80	1.41	15	–	G	–			City Bank
81	1.20	14½	–	G	–	0	100	Bull Wharf
	1.28	14½	–	G	–			City Bank
82	1.00	15	–	G	–	0	100	City Bank
83	0.91	14	–	G	–			City Bank
84	0.85	14	–	G	–			Bull Wharf
85	0.82	14	–	W	–			uncertain
	0.82	14	–	W	–			City Bank
	1.00	14	–	W	–			City Bank
86	0.83	14	–	G	–			Billingsgate
	1.01	13	–	G	–			Billingsgate

	0.95	14	–	G	–			City Bank
87	1.35	15	–	G	–			City Bank
	1.25	14	–	G	–	0	100	Bull Wharf
88	1.04	15	–	W	–	0	100	Bull Wharf
	1.06	15	–	G	–			Billingsgate
89	1.35	15½	–	W	–			City Bank
91	1.06	15	–	W	–			City Bank
92	0.81	15	–	W	–			City Bank
94	1.10	14	–	W	–			uncertain
95	0.98	13½	–	G	–			City Bank
	0.92	12½	–	G	–			Bull Wharf
	1.16	13	–	G	–			City Bank
	0.85	14	–	W	–			City Bank
96	0.81	14	–	G	–			City Bank
97	1.36	13	–	W	–			City Bank
98	0.67	13	–	D	–	0	100	City Bank
99	1.50	14	–	W	–	0	100	City Bank
101	1.38	16	–	W	–	0	100	City Bank
102	0.99	14	–	W	–			City Bank
103	1.29	15	–	W	–			Billingsgate
104	1.23	14½	–	G	–	0	100	Bull Wharf
105	1.20	15	–	G	–	0	100	City Bank
106	1.57	15	–	G	–	0	100	Bull Wharf
	1.29	15	–	D	–	0	100	City Bank
107	1.41	15	–	G	–			uncertain
	1.76	15	–	G	–			Billingsgate
	1.13	15	–	W	–			City Bank
108	0.45	14	–	W	–			City Bank
	0.80	14	–	W	–			City Bank

Main series:

Pictorial obverse:	Weight:	(in good condition)	1.14 gm	(SD 0.22: n = 20)
	Diameter:		14.83 mm	(SD 0.85: n = 20)
Common geometric:	Weight:	(in good condition)	1.10 gm	(SD 0.23: n = 63)
	Diameter:		14.31 mm	(SD 0.78: n = 63)
All Main series tokens:	Weight:	(in good condition)	1.11 gm	(SD 0.22: n = 86)
	Diameter:		14.44 mm	(SD 0.82: n = 86)
	Thickness:	equal to, or above, 0.62 mm		(n = 80)
	Tin (%):	effectively zero		(n = 39)

(all 80 tokens checked for thickness measured not less than 0.62 mm: these have not been individually cited)

I) GEOMETRIC PERIOD: CONTEMPORARY TOKENS

This heading covers two small groups of tokens that belong to the geometric period, but merit individual consideration.

Provenance: London
Chronology: as Geometric series
Metal: Lead (by inspection: not analysed)
Types:

A. *Dumpy imitations of geometric tokens*

1. Multifoil	Multifoil	London	M
2. Straight cross (chequy)	as obverse (probably)	London	M

Both these tokens are in worn condition and they were found together at Queenhithe.
1 Weight: 2.35 gm; Diameter: 13 mm
2 Weight: 2.65 gm; Diameter: 15 mm

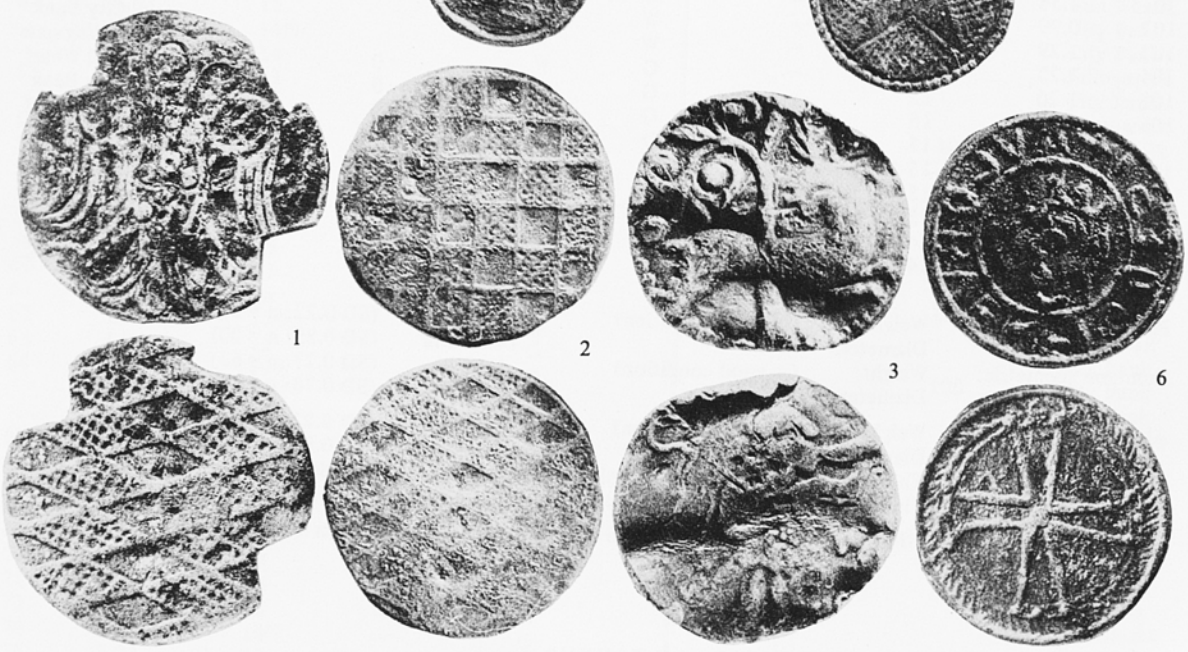
B. *Worn tokens of the geometric series bearing incised graffiti*

3. Incised 12-arm cross	0.65 gm 15 mm	London (Southwark)	M
4. Incised cross: token centrally nailed	1.07 gm 15 mm	London (City Bank)	M
5. Incised cross	1.08 gm 14 mm	London (City Bank)	M
6. Incised criss-cross on obverse and reverse	1.46 gm 17 mm	London (City Bank)	M

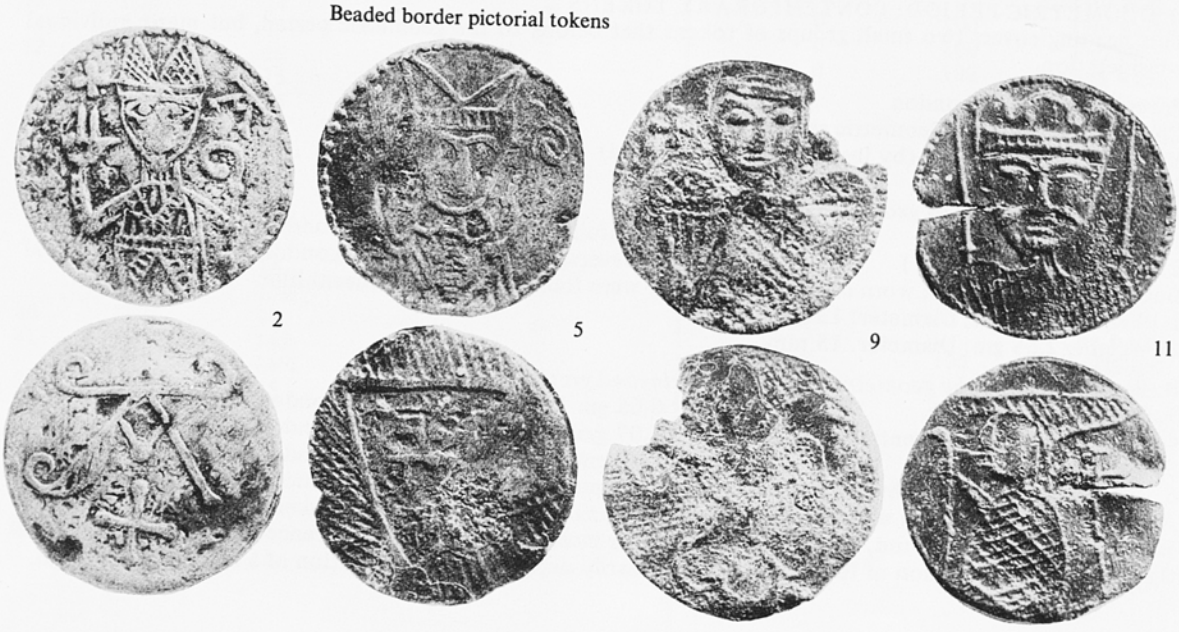
All these tokens are too worn to identify the original designs. Very worn tokens of this general period are not uncommonly found, though they rarely bear incised designs. The occurrence of such pieces suggests that continued circulation of tokens did not necessarily depend upon preservation of a recognisable design.

ENGLISH TOKENS, c. 1200 to 1425

PLATE 1



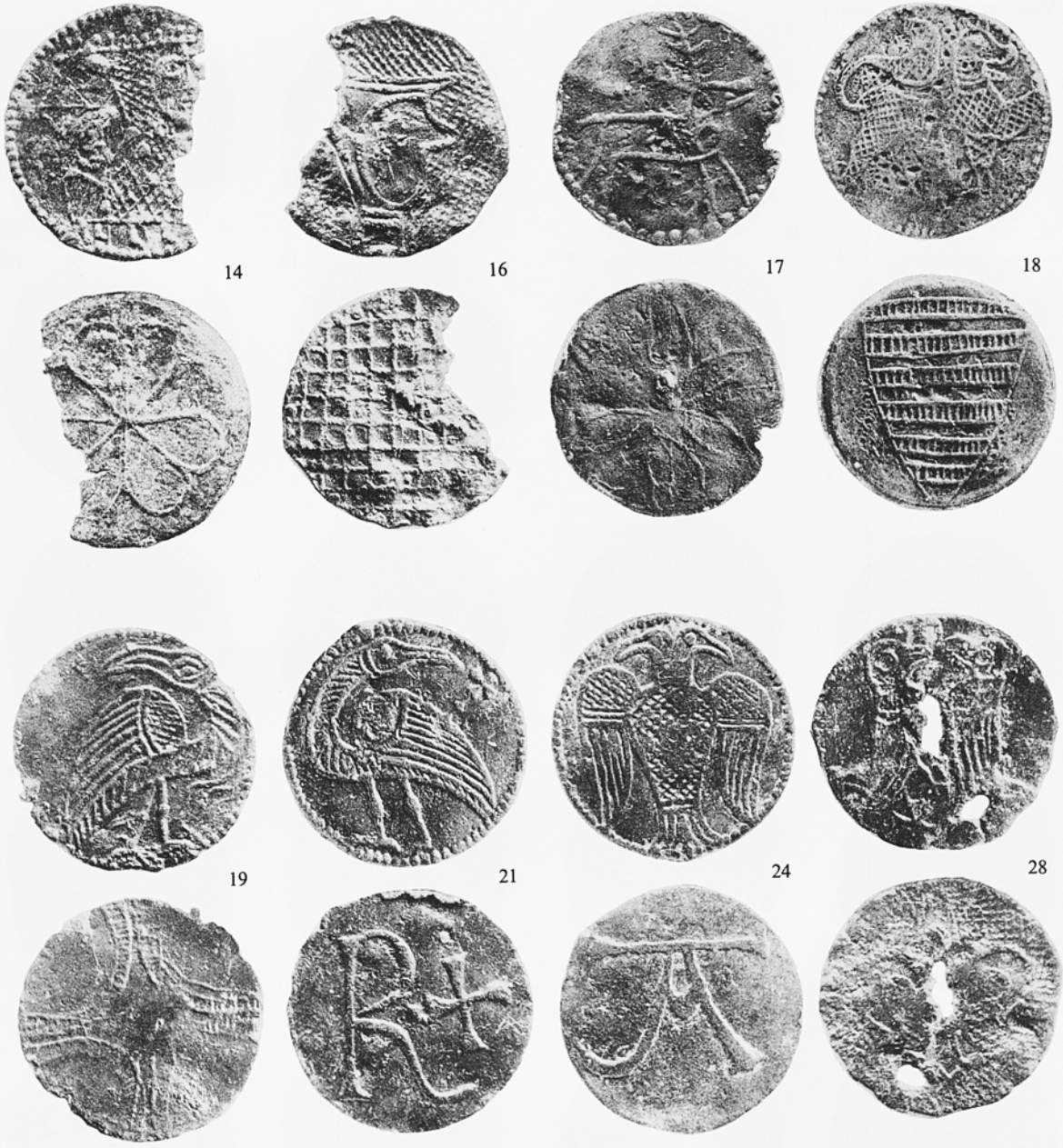
Beaded border pictorial tokens



(Illustrated ×2)

PLATE 2

Beaded border pictorial tokens (*cont.*):



14 16 17 18

19 21 24 28

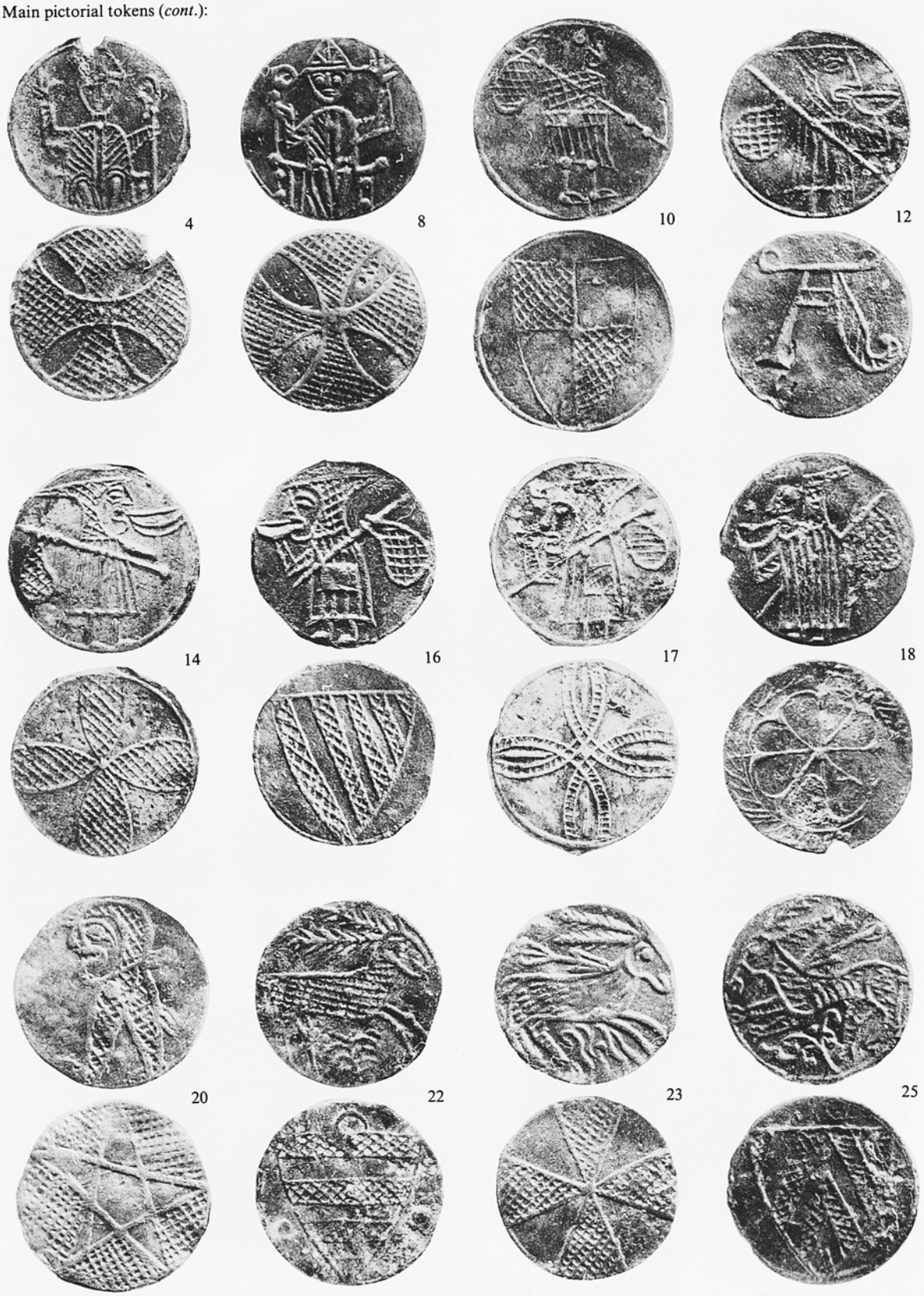
Main pictorial tokens

1

(Illustrated ×2)

PLATE 3

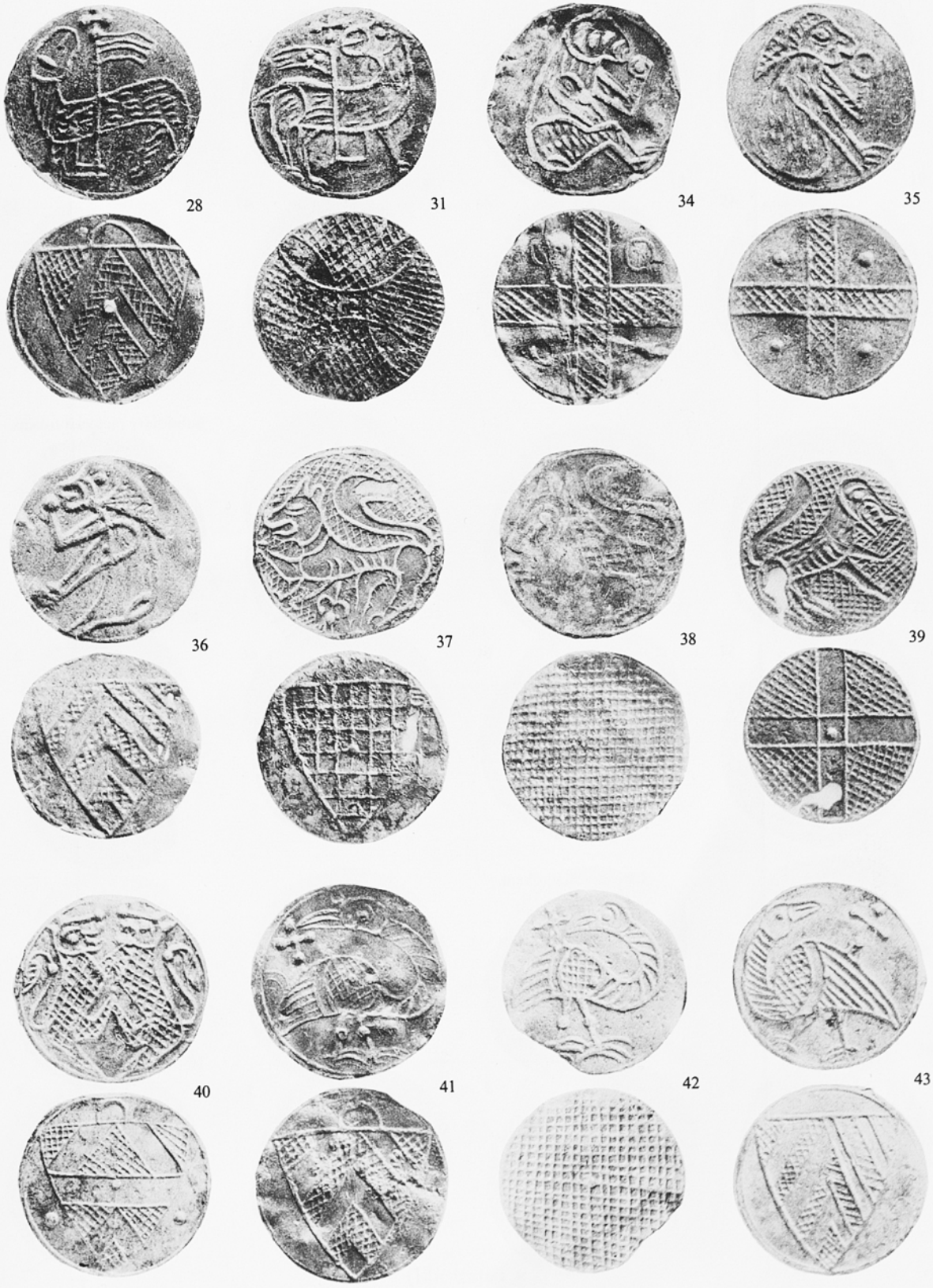
Main pictorial tokens (*cont.*):



(Illustrated × 2)

PLATE 4

Main pictorial tokens (*cont.*):



(Illustrated × 2)

PLATE 5

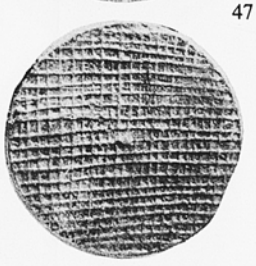
Main pictorial tokens (*cont.*):


45


46


47


55



Subsidiary pictorial tokens


57


61


66


2

Late pictorial tokens


3


2


3


7

(Illustrated ×2)

PLATE 6

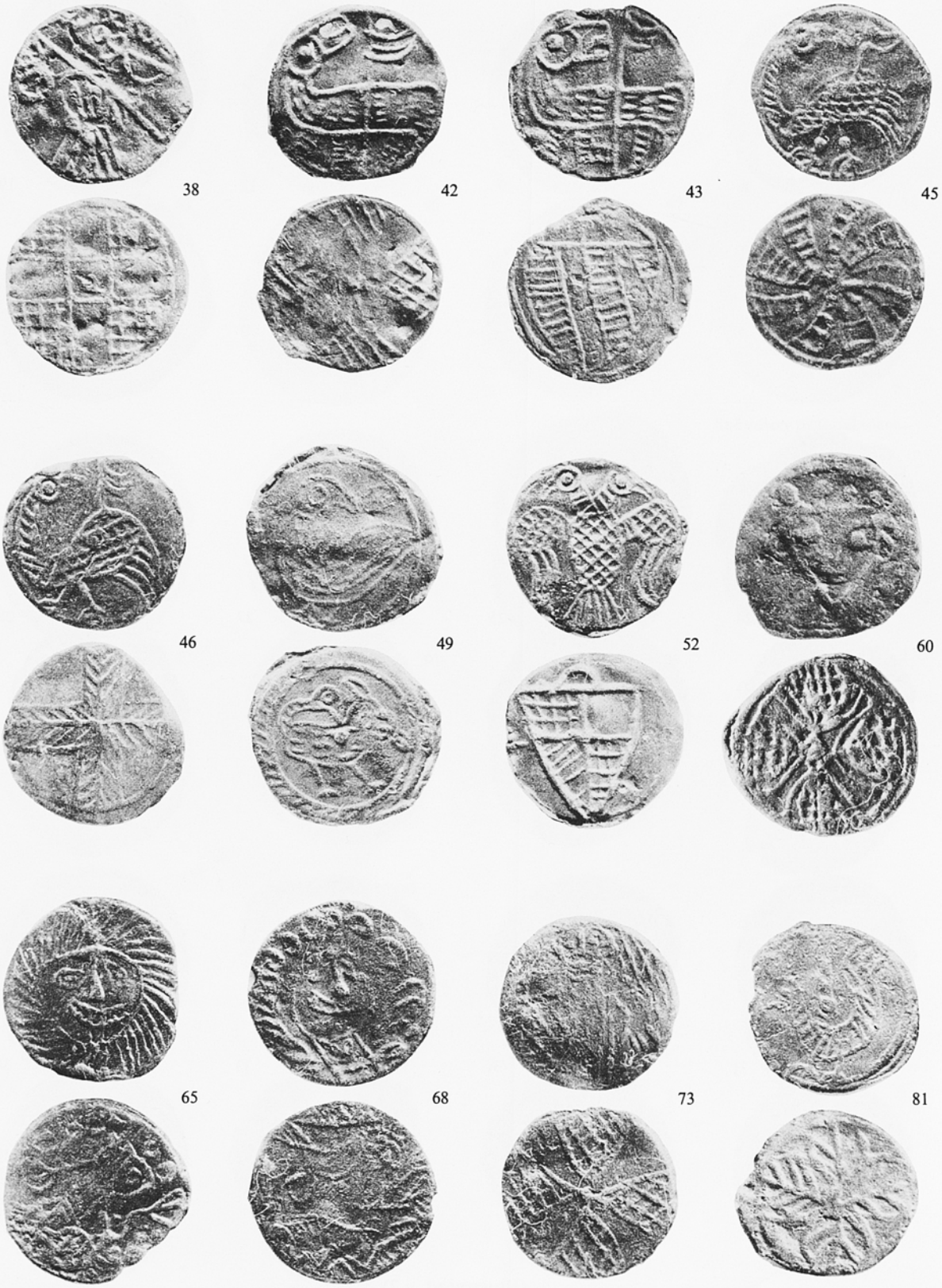
Late pictorial tokens (*cont.*):

(Illustrated ×2)

ENGLISH TOKENS, c. 1200 to 1425

PLATE 7

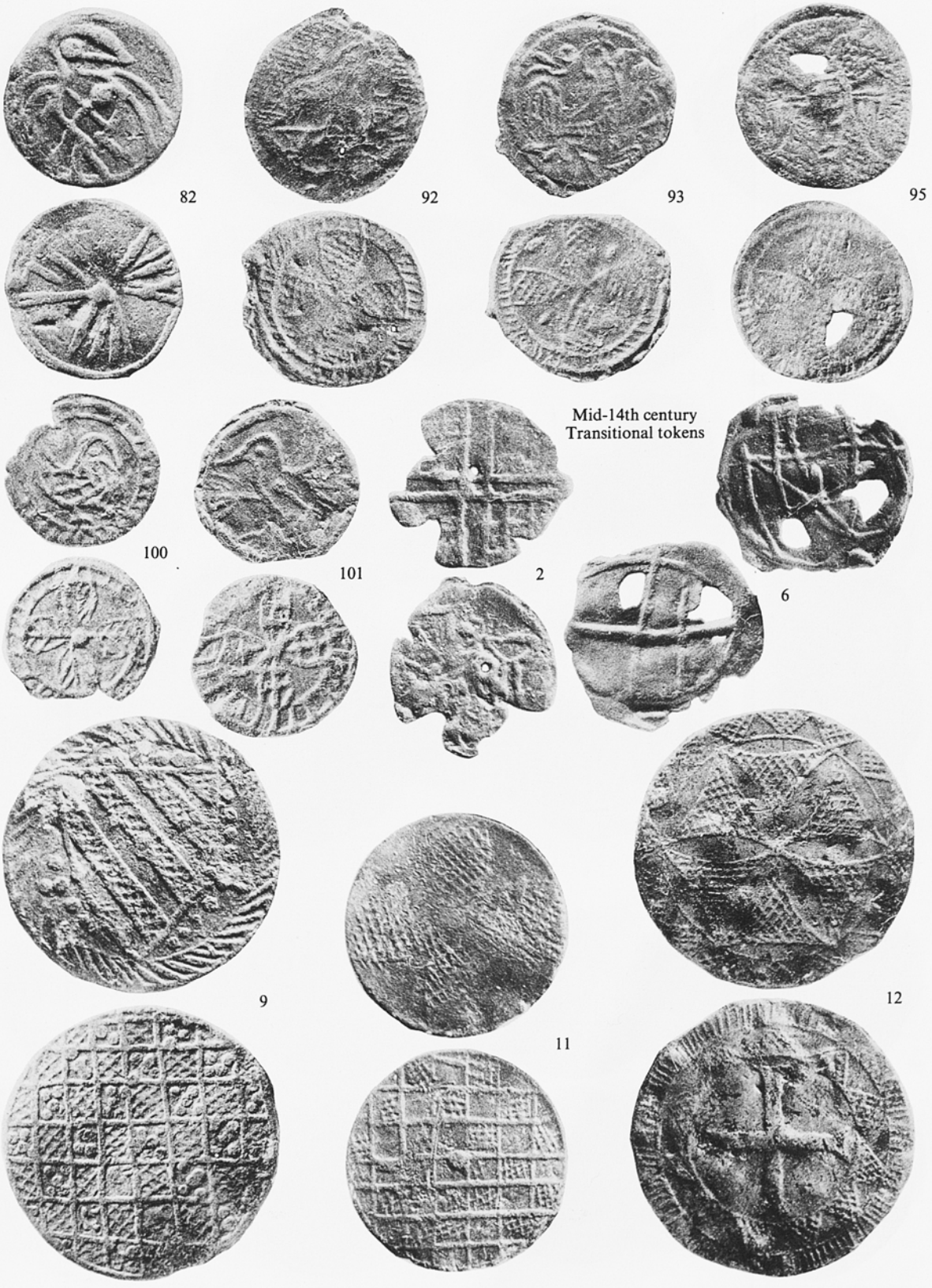
Late pictorial tokens (*cont.*):



(Illustrated × 2)

PLATE 8

Late pictorial tokens (*cont.*):



(Illustrated × 2)

PLATE 9

Mid-14th century Transitional tokens (*cont.*):



15



18


22


24


28


29


30





Geometric tokens


31



1


6



9


12


13

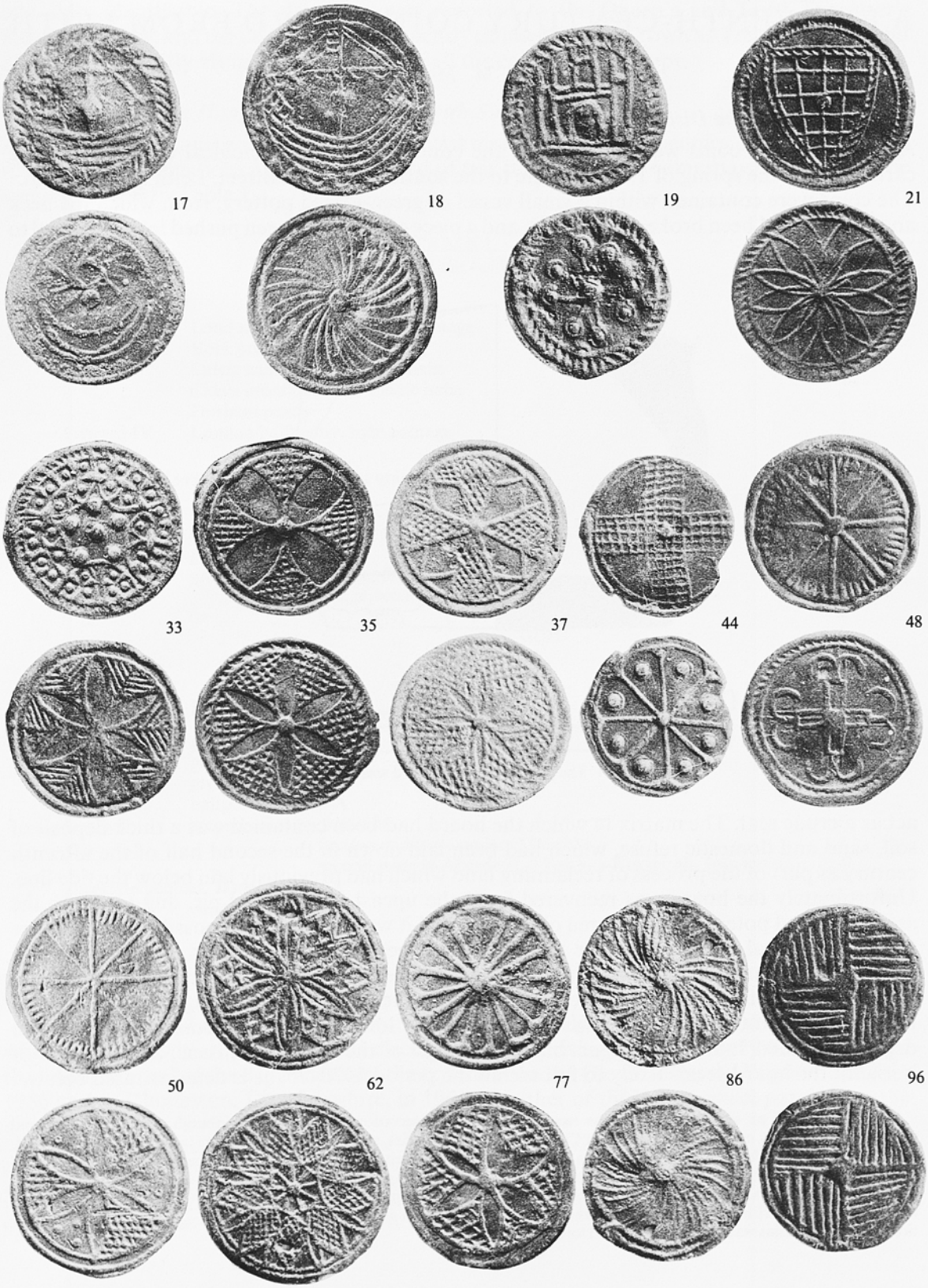

14




(Illustrated × 2)

PLATE 10

Geometric tokens (*cont.*):



(Illustrated × 2)

A FIFTEENTH-CENTURY COIN HOARD FROM LEITH

NICHOLAS M. McQ. HOLMES

Circumstances of the Discovery

A HOARD of 358 coins was recovered in the course of an archaeological excavation being carried out in the spring of 1980 on a site to the south of Bernard Street, Leith (NT 272765).[1] The coins were contained within a small vessel of green-glazed pottery, from which the neck and handles had been broken off (Fig. 1), and a piece of cloth had been pushed into the vessel to

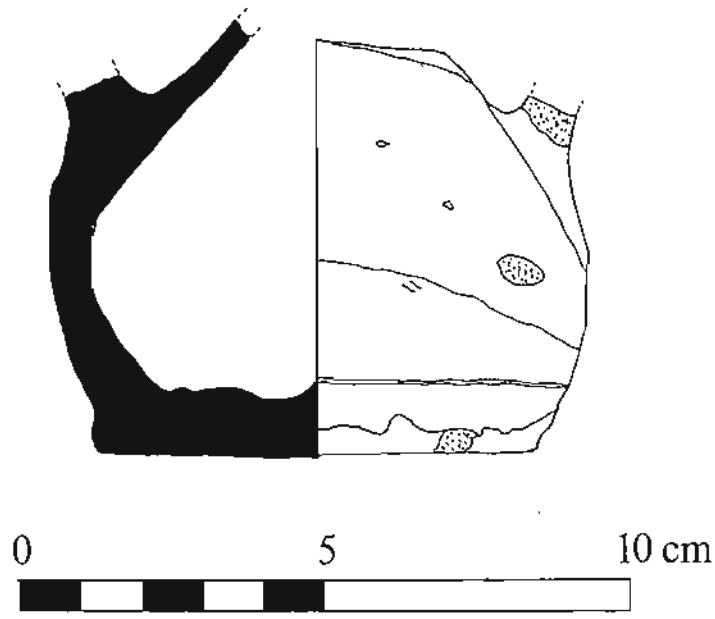


FIG. 1 The pot in which the hoard was contained

act as a crude seal. The matrix in which the hoard had been contained was a thick deposit of soil, sand and domestic refuse, which had been laid down in the second half of the fifteenth century as part of the process of reclaiming land which had previously lain below the tide line. Unfortunately the hoard was recovered from the upcast from a trial pit, dug to assess the archaeological potential of one area of the site, and it was therefore not possible to determine from its physical context whether the hoard had been brought in from elsewhere with a cartload of reclamation material or whether it had been buried on the site on a subsequent occasion. Even if the latter was the case, however, there is evidence to suggest that the time interval between the two events was not particularly long. Other finds from the reclamation deposit included James III copper 'black farthings' of the first (1466) issue, and the date of burial of the hoard seems likely to fall within the period 1470–75, as is demonstrated below.

[1] The excavation on which the hoard was recovered was directed by the writer, on behalf of Edinburgh City Museums and Galleries, and took place with the generous permission of the Scottish Life Assurance Company, owners of the site, and of their agents, Messrs. Kenneth Ryden and Partners. It was financed by the City of Edinburgh District Council. Conservation work on the coins was carried out by Ms Dorothy Marsh, Conservation Officer for Edinburgh City Museums and Galleries, and the photographs were taken by Mr Philip Lloyd. The writer acknowledges with thanks the assistance and encouragement provided by Mrs J. E. L. Murray during the preparation of this report. Any errors which it may contain remain attributable to the writer.

Immediately after their recovery the coins were conveyed to the City Museums' conservation laboratory, where prompt treatment ensured that all but a very few remained both intact and fully identifiable. The discovery was reported to the Queen's and Lord Treasurer's Remembrancer, and the hoard was subsequently claimed for the Crown as Treasure Trove and allocated to Huntly House Museum, where all the coins are now kept.

The Contents of the Hoard and Comparison with Similar Hoards

All but ten of the coins are Scottish, and the vast majority are billon pennies. A complete list of individual identifications appears at the end of this report, but the coins may conveniently be summarised as in Table 1.

TABLE 1.
Contents of the Leith Hoard

ENGLISH (10)		
Edward III	London half-groats, fourth coinage	2
Henry V	York penny	1
Henry VI	Calais half-groats, annulet issue	3
,, ,,	Calais groats, rosette-mascle issue	2
,, ,,	Durham penny	1
Edward IV	London halfpenny, light coinage	1
SCOTTISH (348) (all Edinburgh mint unless stated)		
	Silver	
Robert III	Perth half-groat, heavy coinage, second issue	1
James I	groat, first variety	1
James II	groats, second coinage, first issue	3
,, ,,	,, second coinage, second issue, type I	2
,, ,,	,, ,, ,, ,, ,, ,, II	4
,, ,,	,, ,, ,, ,, ,, ,, III/II	1
,, ,,	,, ,, ,, ,, ,, ,, III	3
,, ,,	,, ,, ,, ,, ,, ,, IV	1
	Billon (pennies unless stated)	
James I	group A, Inverness	1
,, ,,	group B	1
,, ,,	group C, Aberdeen	2
,, ,,	halfpenny, group A	1
James II	second coinage, first issue	1
,, ,,	,, ,, first/second issue mules (1 Perth)	4
,, ,,	,, ,, second issue (4 Aberdeen, 6 Perth, 1 Roxburgh, 1 uncertain)	214
uncertain pennies, James I or II		2
James III	class A	106
		358

Scottish hoards buried in the fifteenth century are fairly uncommon, and only two exist which compare with this most recent discovery in comprising almost entirely billon pennies, the 'small change' of the day. These are the hoards found at Glenluce Sands, Wigtownshire, in 1956 and at Rhoneston, Dumfriesshire, in 1961.[2] Neither of these is an exact parallel for the

[2] Full discussion of all aspects of these two hoards can be found in B. H. I. H. Stewart, 'The Glenluce Hoard, 1956', *BNJ* 29 (1958-59), 362-81; E. M. Jope and H. M. Jope, 'A Hoard of Fifteenth-Century Coins from Glenluce Sand-Dunes and their Context', *Medieval Archaeology* 3 (1959), 259-79; B. H. I. H. Stewart, 'The Glenluce and Rhoneston Hoards of Fifteenth-Century Coins', *Proceedings of the Society of Antiquaries of Scotland* 93 (1959-60), 238-44; B. H. I. H. Stewart and R. B. K. Stevenson, 'The Rhoneston Hoard, 1961', *BNJ* 34 (1965), 109-17.

Leith hoard, as both were deposited significantly later and contain a high proportion of coins of later issues than those found at Leith, but all three hoards show a striking similarity in a number of respects. Each contains a small number of English coins, most of them of considerably earlier date than the Scottish coins buried with them, a shorter series of Scottish silver, terminating somewhat earlier than the latest billon issues represented, and a collection of billon pennies which constitutes a high proportion of the hoard in terms of both quantity and original purchasing power.[3]

The latest issues contained in the Leith hoard are the light coinage halfpenny of Edward IV (1469–70) and the class A pennies of James III. This class is considered to have accompanied the Group I groats, the minting of which commenced c.1465–70 and possibly in 1467, but the pennies may have been introduced earlier.[4] Many of them display the use of the letter B for R in one or both of the legends, a convention considered to have been copied from English coins of the period of Henry VI's restoration (1470–71).[5] The subsequent issue (class C) was commenced around the end of the year 1475 and is a fairly common type, and as no examples of this appear in the hoard, it may be suggested that it had already been deposited by about this date.[6] It is notable that the hoard contains no placks, although this denomination is considered to have been introduced at around the same time as the class A pennies. First issue placks of James III occurred in both the Glenluce and Rhoneston hoards, although these were much smaller than the Leith find (112 and 83 coins respectively), but both hoards contained a much higher number of class C pennies than class A (45:11 at Glenluce, 34:13 at Rhoneston).

If a date of deposition of around 1470–75 is postulated, the distribution of coins within the hoard can be compared with that of Glenluce and Rhoneston, which are considered to have been buried c.1495+ and c.1488–90 respectively.[7] The latest Scottish silver coin from Leith is the type IV groat of James II's second coinage, second issue (i.e. the crown groat coinage). This type has lettering similar to the earliest groats of James III and is therefore considered to belong at the end of the crown groat coinage, i.e. in the mid to late 1460s, this series continuing well into the reign of James III.[8] No examples of the early mullet groats of James III were included in the hoard, although there were 106 specimens of the associated class A pennies. At both Glenluce and Rhoneston there was a gap of at least five years between the issue of the latest groats and the latest pennies represented. Of the Scottish silver coins at Leith, all but the very worn Robert III half-groat were contemporary with pennies which also appeared in the hoard. The English silver, as at Glenluce and Rhoneston, was for the most part much earlier than the bulk of the hoard. The earliest coins were the two half-groats of Edward III, dating from c.1351–52, and it has been noted that coins of this king continued to circulate in Scotland for an inordinately long time.[9]

A few of the silver coins were in a better state of preservation than would have been expected, given their age at the time of deposition of the hoard, and seem likely to have been removed from circulation at an earlier date. In particular this applies to one of the Edward III half-groats (No. 1) and to a groat and a half-groat of Henry VI (Nos. 4 and 8). Most of the silver coins, however, to judge from their degree of wear, could well have continued in circulation until c.1470. The unworn appearance of many of the older silver coins from Glenluce and Rhoneston was noted and contrasted with the poor state of preservation of some of the billon pennies.[10] At Leith the contrast is not so great, although a few of the silver coins appear to have been hoarded up for some time. This may also have been the case with a few of the earlier billon

[3] For discussion of the composition of the two earlier hoards, see 'The Glenluce and Rhoneston Hoards', pp. 240–41.

[4] I. H. Stewart, *The Scottish Coinage*, revised edition (London, 1967), p. 59; Joan E. L. Murray and B. H. I. H. Stewart, 'Unpublished Scottish Coins V', *NC* 7th ser. 10 (1970), 163–86 (pp. 164–71).

[5] *The Scottish Coinage*, p. 60.

[6] *The Scottish Coinage*, p. 62.

[7] 'The Glenluce and Rhoneston Hoards', p. 240.

[8] For discussion of the date of introduction of class IV groats, see B. H. I. H. Stewart and Joan E. L. Murray, 'Unpublished Scottish Coins IV', *NC* 7th ser. 7 (1967), 147–61.

[9] 'The Glenluce and Rhoneston Hoards', p. 240; 'The Glenluce Hoard', pp. 364–65.

[10] 'The Glenluce and Rhoneston Hoards', p. 240.

pennies, as there is at times a considerable variation in the apparent degree of preservation of pennies struck from the same dies, but in many cases this may be due to poor striking or the use of worn dies.

It was considered that the Glenluce and Rhoneston hoards showed evidence of some progressive hoarding, with the addition of whatever small change the owners had in their possession at the time of the emergency which caused the coins to be buried, and that they did not therefore fall into the same category as most hoards, which are the result of the accumulation of savings over a long period. The Leith hoard, with its high proportion of base metal pennies, is also unlikely to represent long-term savings, as good silver coins would have been preferred for such a purpose. The number of pennies is considerably larger than in the other two hoards, however, and it seems unlikely that a private individual would have had so many of these coins in his possession without changing some of them for good silver. The hoard may therefore represent for the most part the recent takings of a shopkeeper, perhaps stolen and subsequently buried by the felon for fear of apprehension. (The hoard could simply have been dumped on a rubbish heap and brought to the spot where it was found with a wagon-load of refuse. A broken pot would not have attracted much attention on a domestic midden.) The absence of James III mullet groats could be explained if the coins had belonged to a shopkeeper who sold only inexpensive items and therefore received payment only in small change, although it seems less likely that this explanation alone would account for the absence of placks. The earlier Scottish and English silver coins could then be seen as earlier savings lying in the pot in which more recent takings were temporarily deposited.

The distribution of billon penny types within the hoard does nothing to contradict the theory that most of these coins could have been taken from circulation during the early 1470s. All but a handful belong to the post-1451 coinage of James II or the earliest issue of James III. A few of the James II coins show a small enough degree of wear to indicate that they could possibly have been removed from circulation some years earlier, but the condition of the majority appears consistent with a period of circulation of ten to twenty years. The 2:1 ratio of James II to James III pennies may perhaps be a clue to a date of burial fairly early in the period of issue of James III class A, but against this must be set the inclusion of at least forty-two James III pennies with B for R in the legend(s).

The Numismatic Significance of the Hoard

The most valuable aspect of the Leith hoard is its contribution to our understanding of the billon penny issues of James II and of the first issue of James III, i.e. of the period of c. twenty years from 1451. Although the Glenluce and Rhoneston finds yielded some valuable information on both these series, especially in the form of previously unknown varieties, the majority of the pennies in these two hoards were of later issues. This is the first discovery to include substantial numbers of James II pennies, and it also contains by far the largest single assemblage of James III class A.

In the case of the James II coins, it has been possible to differentiate for the first time between identifiable sub-types of the crown groat issue pennies and to formulate a relative chronology for some of them. Although variations in obverse and reverse design have long been recognized within this series, it has not previously been possible to establish the significance of any of these variations, especially as there appeared to be little direct relationship between the pennies and the various issues of groats. The large number of die-links within this hoard has made it possible to study all the aspects of particular dies, as different parts of the design are clearest on different coins, and comparison with coins in the collections of the National Museum of Antiquities of Scotland has facilitated the inclusion of many of the previously known dies within the new scheme of classification. The establishment of a chain of die-links covering the

complete span of James II's billon coinage, from the first issue of the second coinage down to the Roxburgh issues of 1460, is a fair indication that there are now no major gaps in our knowledge of the types issued during this period. Small groups of coins with distinctive features can now be assigned with confidence both to the beginning of the second issue and to a short period centred on the siege of Roxburgh and the death of the king in 1460. The majority of the coins date from the intervening period, and there is no evidence to suggest that the minting of crown groat issue pennies continued for more than a very short time after the king's death. This presents a contrast to the generally accepted theory concerning the groats of this coinage, the minting of which appears to have continued until the later 1460s.

Unfortunately the picture is less complete as regards the first issue pennies of James III (class A), although much new information about this series has been provided. In particular, a single coin from the Glenluce hoard (No. 24), which was seen as a mule of a James III class A obverse with a James II reverse, having a crown initial mark, must now be regarded as the first known example of a regular issue of James III. The Leith hoard contained thirty-three coins of this type in all, of which ten were from the same reverse die as Glenluce 24 and the remainder from two reverse dies with points between the pellets in all four angles of the cross. The style of the reverse of these coins is clearly the same as that of the 'normal' coins of James III class A, and there is as yet nothing to indicate that the use of the crown and cross initial marks was of any significance.

The Leith hoard also contained examples of a previously unknown type of class A penny, with reverse initial mark cross and points between the pellets. In view of the number of fresh discoveries within class A which this hoard has revealed, there must be a strong possibility that other types still remain to be found and identified.

A piece of negative evidence which may be of some significance is the total absence from the Leith hoard of an enigmatic class of James III penny which was identified at both Glenluce and Rhoneston. These coins display affinities with class A in both bust and lettering, although the lettering also shows resemblances to that of the 'post-1484' group V groats (according to the classification formerly in use—these groats are now considered to be post-1490). The pennies were provisionally classified as Di, but with the Rhoneston evidence they were ascribed to the early period.[11] Although the absence of these coins from a hoard containing, and terminating with, so many class A pennies does not in itself disprove this theory, it does indicate that, if correctly placed in class A, they are late in that class.

Classification of the Pennies and the Relationship of the Various Types

(B = E. Burns, *The Coinage of Scotland* (1887); S = I. H. Stewart, *The Scottish Coinage*, revised edition (1967).)

James II, second coinage

The opportunity provided by the Leith hoard to examine a total of 218 pennies of James II's second coinage and to compare these with other specimens has made it possible for the first time to draw up a provisional typology for these coins. Variations in design within the large second issue have long been noted, in particular the presence or absence of saltires and fleurs-de-lis on the obverse and reverse, and Leith has now added other minor variations not previously observed, mainly in the form of the obverse initial mark. As a result of this, and of the system of die-links which it has been possible to construct, a scheme of classification has been developed which takes into account the dating evidence which is available for some of the varieties. The absence of gaps in the chain of die-links suggests that few if any major varieties remain to be discovered within this series, but it is hoped that any which may subsequently appear can be accommodated within the framework postulated. In addition, if other billon hoards of this period should come to light, it may be possible to make further chronological sub-divisions, particularly within the disproportionately large type B.

[11] 'The Rhoneston Hoard', p. 110.

The second coinage pennies begin with the very small first issue, which is characterized by a clothed bust on the obverse and by the presence of pellets in only two angles of the reverse cross (B 1b, Fig. 518A; S 93). Only one obverse die is known for this issue, and the occurrence of mules of this with reverses of the second issue is of great value for dating purposes.

The earliest coins of the second issue comprise two distinct types, which have been categorized as Ai and Aii. Only a few coins of each type are known, but in view of their particular characteristics and proven early date, there seems little danger in regarding these as representatives of a small and short-lived, but distinctive, issue. Type Ai comprises those second issue coins which have a crown in the first quarter of the reverse cross and pellets enclosing an annulet in the other three angles. This reverse was first observed on a mule coin from the Glenluce hoard (No. 15), the obverse of which had been struck from the single known die of the first issue pennies. Stewart then suggested that the reverse was an early experimental type of the second issue, and this theory was supported when a coin with the same reverse and with a second issue obverse appeared in the Rhoneston hoard (No. 10). Leith has yielded a second example of both types, from the same dies as the earlier discoveries.

The obverse of the second issue type Ai pennies is from the same die as B 3a, Fig. 553A, which displays the initial mark cross fourchée. This was not noted by Burns, who assumed that the poorly-preserved initial mark on the coin he illustrated was a crown, but it was correctly described by Stewart and Stevenson in their report on the Rhoneston hoard. At present no other penny obverse dies are known with the cross initial mark, and an early position in the series can be postulated for all the coins with this obverse on the basis of its appearance in combination with the crown and pellets reverse type. It would thus seem reasonable to associate it with the earliest (type I) class of the second issue groats, which also display the initial mark cross fourchée. Confirmation of this can be found in the form of the over-large S at the end of the king's name on this obverse die. This is identical to the corresponding letter on the type I groats and was clearly put in from the same punch.

Type Aii consists of all pennies with obverse initial mark cross and standard reverse type of three pellets in each angle of the cross. Fifteen coins of this type have been examined—thirteen from Leith and B 3a and Rhoneston 11 in the National Museum of Antiquities of Scotland. (The reverse of Rhoneston 11 is from the same die as B 3a, although this was not mentioned in the report. The saltire stop indicated at the end of the second quarter of the legend can be seen in the light of comparison with other coins to be part of the letter E from a partially blocked die.) That the period of use of this obverse die was not contemporary with the issue of type B pennies is strongly suggested by the almost total lack of reverse die-links between the types. Of the fifteen known Aii coins, only three show reverse die-links outside the type. Two of these (Leith 49 and 49a) have the same reverse which occurs on a mule with the first issue obverse (No. 35), which serves to emphasize again the early date of type A pennies. The other (Leith 41) has a reverse which also appears on one coin with a type Bi crown initial mark obverse (No. 164), and Leith 41 should strictly, under the new classification, be regarded as a mule of types Aii/Bi. This provides another useful link in the relative chronology, but the various types within this series are not mutually exclusive to the extent that the term 'mule' would really be justified.

Type B contains the large majority of James II's pennies. The coins have a crown or lis initial mark or none at all on the obverse, and some have saltires on the obverse and/or reverse. Two examples are also known with annulets on the reverse (Glenluce 16 and a specimen in the Stewart collection).[12] Both these coins have a crown initial mark on both obverse and reverse, confirming their position within class B. There was clearly no great gap in time between the minting of type Aii and type B pennies, as the existence of the 'mule' (No. 41) demonstrates; No. 164 (from the same reverse die as No. 41) serves to indicate that saltires appeared on the

[12] See 'The Rhoneston Hoard', p. 110 and note 3.

obverse at a very early stage of the issue of type B. Of 166 pennies of this type at Leith, 135 had a crown initial mark on the obverse, and it seems reasonable to assume that these can be associated with the groats of types II and III, almost all of which have crown initial marks.

There seems to be no particular significance in the presence or absence of saltires on the obverse and/or reverse, but coins with none are in the majority. (The figures for the Leith hoard are: plain obverse and reverse 94, plain/saltires 29, saltires/plain 19, saltires on obverse and reverse 32.) There is, however, a substantial minority of coins of type B (26 from Leith) which have no initial mark at all on the obverse, and a small group with initial mark lis, which has not previously been recorded. At present there is no evidence to suggest that either of these groups should be regarded as other than part of type B, but further discoveries may cause this opinion to be revised. Because of this it may be regarded as useful to sub-divide type B on the basis of obverse initial mark, with Bi comprising crown coins, Bii those with no initial mark, and Biii those with lis. The two annulet reverse coins, considered by Stewart to represent an early experimental issue which was rapidly superseded, are included in Bi on the basis of their crown initial marks. The absence of any annulet coins from the Leith hoard suggests that the mintage must have been small, although the two known examples are from different dies.[13] Their position in the series remains uncertain.

Type C comprises the latest group of James II's pennies, which are characterized by fleurs-de-lis on either side of the bust and on the chest. These coins must all have been minted during a fairly short period leading up to, and possibly continuing for a short while after, the death of the king at the siege of Roxburgh in 1460. Again the coins can be sub-divided on the basis of obverse initial mark, type Ci having no initial mark and type Cii comprising a previously unknown type with initial mark lis. Only one obverse die is known for each type, and that for Ci was known to Burns from an Edinburgh penny (B 6a, Fig. 555A). It was subsequently found to have been used to strike the only previously recorded penny of Roxburgh, and the die is considered to have been used first at Roxburgh and then at Edinburgh.[14] A second Roxburgh penny from the same dies came to light in the Leith hoard (No. 226). Two Edinburgh pennies of type Ci from Leith have reverse die-links with type Bi coins, indicating again that there was probably no substantial time-lag between the minting of the different types of penny. Type Cii comprises a group of six coins from Leith, one of which (No. 235) has a reverse die-link with a Ci penny (224). These two varieties were probably more or less contemporary, perhaps with the Cii obverse superseding the Ci at Edinburgh. All six of the Cii pennies are in fairly sharp relief on the obverse, indicating perhaps that the die was not in use for long.

The evidence strongly suggests that these coins with lis on the obverse comprise the latest issue of the crown groat coinage pennies. If a later issue were to be postulated, it would have to be argued that no examples of this were contained in the Leith hoard. In view of the number of earlier James II pennies and of James III class A in the hoard, it is most unlikely that any but a very small issue of the intervening period would be unrepresented. This indicates that James II's billon coinage ceased fairly soon after his death. It is interesting to note that, like the type A and B pennies, those with lis on the obverse have possible counterparts in the groat coinage, namely those coins with lis above and to the right of the crown which have been tentatively ascribed to an issue immediately following the death of the king.[15] There appear to be no counterparts in the billon coinage of James II for the late (type IV) groats. These have lettering resembling that of the earliest mullet groats of James III and are therefore considered to date from well after James II's death and nearer the commencement of the mullet groat coinage in c. 1467–70. Billon counterparts for these groats may perhaps be found in the earliest penny issues of James III (see below, p. 91).

[13] 'The Rhoneston Hoard', p. 110.

[14] 'Unpublished Scottish Coins IV', pp. 160–61; I. H. Stewart, 'Scottish Mints' in *Mints, Dies and Currency: Essays Dedicated to the Memory of Albert Baldwin*, edited by R. A. G. Carson (London, 1971), 165–289 (pp. 268 and 286–87.

[15] 'Unpublished Scottish Coins IV', pp. 153–56.

In summary, it must be emphasized that the suggested scheme of classification is not intended to imply that the pennies of James II can be split up into neat parcels, each one representing a separate and distinct issue. The evidence is far more indicative of a fairly continuous process of minting, with minor variations in design being introduced and superseded. The divisions and sub-divisions are rather intended to elucidate the development of this part of the coinage by drawing attention to those variations in design which appear to have been significant.

The proposed typology may be summarised as follows:

Type A Obverse with initial mark cross fourchée. Ai—with reverse of crown in first quarter, three pellets enclosing an annulet in the other three angles. Aii—three pellets in all four quarters, nothing between.

Type B Bi—obverse initial mark crown; obverse and reverse either plain or with saltires (any combination); two coins known with annulets and crown initial mark on reverse. Bii—no obverse initial mark; only plain obverse and reverse so far recorded. Biii—obverse initial mark lis; only plain obverse so far recorded; reverse plain or with saltires.

Type C Obverse with lis on either side of bust and on chest; reverse plain or with saltires. Ci—no obverse initial mark. Cii—obverse initial mark lis.

Pennies of all types were minted at Edinburgh. Coins of other mints so far recognized comprise the following:

Aberdeen	Bi
Perth	First issue/Bi mule (Leith 36, see below, p. 92), Bi
Roxburgh	Ci

A schematic representation of chains of die-links (Fig. 2) serves to demonstrate both the unbroken continuity of the second coinage penny series and the position of some of the types within the series. There is little doubt about the positioning of types A and C at the beginning and the end of the series respectively, but clearly the diagram includes only a small proportion of the coins of type B, which were certainly minted over a fairly long period. The reverse die-linking of No. 164, which has the same obverse as six other Bi coins from Leith, with No. 41 from type Aii indicates an early introduction for this type, and the reverse linking of No. 136 (with the same obverse as four other Bi coins) with No. 227 from type Ci demonstrates the continuation of this type until almost the end of the coinage. Coins of type Bii at Leith were all struck from one or other of two obverse dies, and it seems unlikely that both were in use at the same time. The first die, from which Nos. 184–203 were struck, has a double saltire stop above the centre of the crown, in the position where an initial mark would be expected in other types, and almost all these coins have reverse die-links with coins of type Bi. (One class III groat displaying a similar feature of saltires instead of crowns, at the beginning of the inscriptions on the reverse, was identified by Stewart and Murray.[16]) The second obverse die (Nos. 204–209) has no mark or stop between the end and the beginning of the legend, and three of the six coins have reverse links with Biii or Ci pennies. Indeed, it is via these Bii pennies that type Biii is linked with Ci, and all may belong to the middle to later part of the series.

No distinction between the various types of James II penny can be made on grounds of weight. Despite the widely varying state of preservation and degree of wear on coins of this series from Leith, there is a fairly high concentration within a fairly narrow weight range. Of 216 second issue pennies, exactly half weigh between 0.56 and 0.75g, and a slightly wider range of 0.51–0.80g contains 164 coins (75.9 per cent). The average weight of all the second issue

[16] 'Unpublished Scottish Coins IV', pp. 153–54, no. 52f.

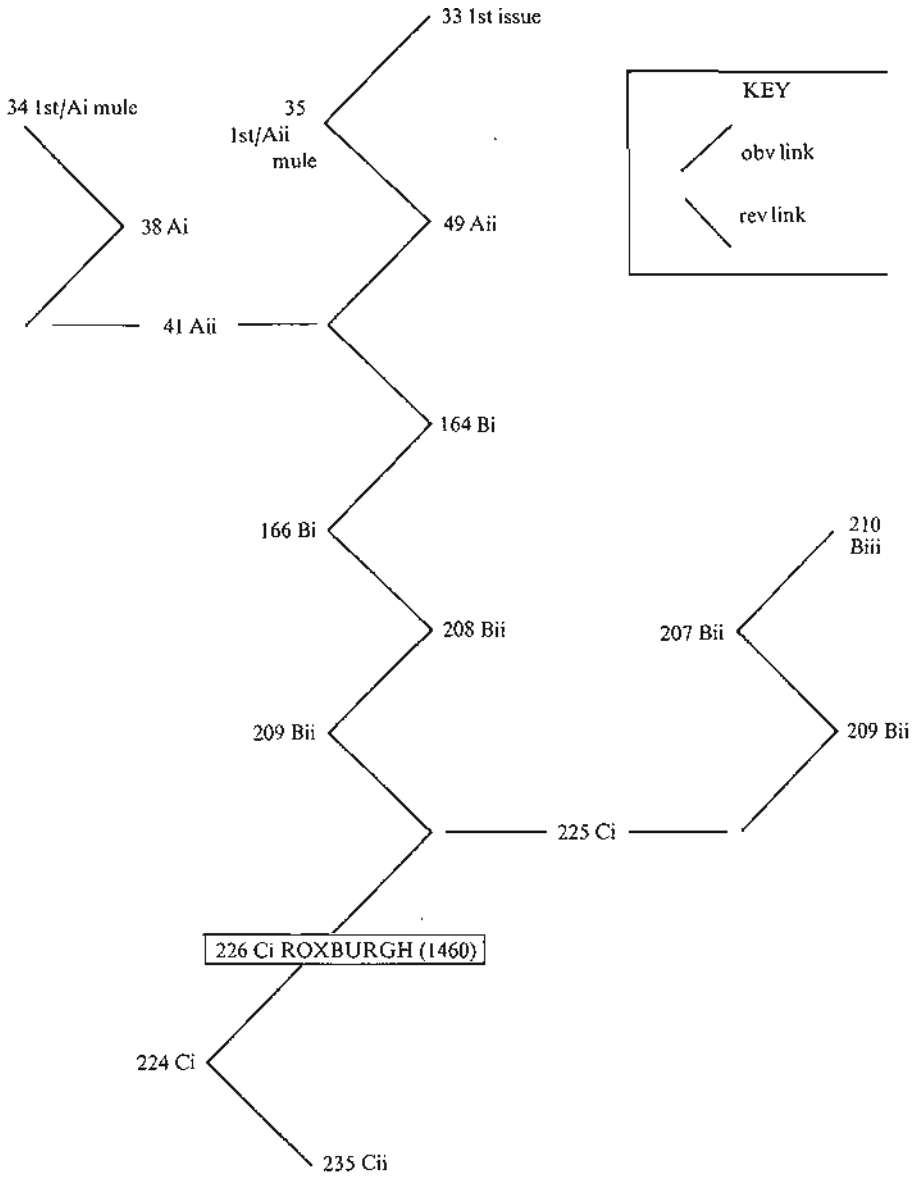


FIG. 2 Schematic representation of selected die-links between James II pennies

pennies is 0.66g (10.18gr), which is also the average for type B. The average for the numerically much smaller types A and C is 0.62g (9.57gr) and 0.64g (9.88gr) respectively. The full range of weights extends from 0.33g to 1.05g, and it would perhaps be unwise to place too much reliance on evidence from this hoard for the original weight of pennies of this series, but for the record the average weight of 0.66g (10.18gr) produces a figure of 46.28 coins per Scottish ounce (1 Scottish ounce = 471.16 English grains). If an allowance is made for the weight of each coin when struck being slightly greater than its present weight, a theoretical yield of 40–45 coins per Scottish ounce of billon would seem reasonable. It must be emphasized that this figure is not reliable, however, especially as there is no way of calculating the effect on the weight of each coin of corrosion while in the ground and of the subsequent removal of

corrosion products in the laboratory. For the same reason it has not been considered worth while to subject the coins to metallurgical analysis. When recovered they were almost all covered with a layer of green copper corrosion products, which was subsequently removed, and any calculation of the ratio of silver to copper in the alloy would almost certainly be highly unreliable as a guide to the original proportions.

James III class A

The system of classification which has been employed to date for pennies of this series is that which was drawn up by Stewart on the basis of the coins found in the Glenluce and Rhoneston hoards.[17] In this typology class A was sub-divided into four groups as follows:

Ai saltires beside bust on obverse
Aii saltires on reverse
Aiii plain reverse
Aiv annulets on reverse

In addition, two coins had been identified prior to the discovery of the Leith hoard which were classified as mules of James III class A and the James II crown coinage. Both these coins had a crown initial mark on the reverse, but one of them (Glenluce 24) had a plain obverse and the other (formerly from the Lockett collection) had saltires on the obverse.[18]

The opportunity provided by the Leith hoard to study a group of 106 class A pennies has resulted in a considerable increase in our knowledge of this series, and there is now a need for a completely new classification. The old type Ai, which in any case comprised only two known coins, can no longer be regarded as an acceptable sub-group. One of the coins (Glenluce 25) is very different stylistically from all other class A coins, and it is now generally accepted that it belongs in class C.[19] The only other known coin with saltires on the obverse is the so-called 'mule', formerly in the Lockett collection, which can now be seen to be a variety of a fairly substantial sub-group of class A pennies. The Leith hoard contained thirty-three examples of pennies with a crown initial mark on the reverse, and the style of the reverses of these coins is undoubtedly the same as that of other class A pennies. The classification of these as mules must therefore be abandoned, and they must be incorporated as a new sub-division of class A. Of the Leith coins of this type, ten had a plain reverse (as Glenluce 24) and twenty-three had points between the pellets, the latter being a previously undiscovered variety.

Also at Leith were six coins with points between the pellets and reverse initial mark cross fourchée. This is also a previously unrecorded type, although a coin published by Burns as a penny of James II (B 8, Fig. 559) may be an unrecognized example. The types, legends and style of lettering are very similar to those of the Leith examples, although there are no die-links.

The main problem in formulating a new system of classification for the class A pennies is that there is as yet little evidence for sequence or dating within the series. Although there are a number of obverse die-links between the various sub-groups, there are no clearly datable types at the beginning and the end of the series, as is the case with the James II second coinage. The fact that the Leith hoard has produced two completely new varieties indicates that others may yet remain undiscovered, and for this reason the proposed classification makes allowance for the inclusion of as yet unrecorded types by differentiating on the basis of both reverse initial mark and reverse type. No attempt has been made to include obverse types within this system,

[17] 'The Glenluce and Rhoneston Hoards', p. 242.
[18] 'Unpublished Scottish Coins V', p. 171, no. 58.
[19] 'Unpublished Scottish Coins V', pp. 171-72; the reattribution has now been confirmed by Mrs Murray.

as only one known coin has other than a plain obverse. The suggested typology is therefore as follows:

Aa1 reverse initial mark crown; nothing between pellets. (Obverse normally plain, but the ex-Lockett penny with saltires on the obverse is assigned to this group pending further evidence.)
Aa2 reverse initial mark crown; points between pellets.
Ab1 reverse initial mark cross fourchée; nothing between pellets (formerly Aiii).
Ab2 reverse initial mark cross fourchée; points between pellets.
Ab3 reverse initial mark cross fourchée; saltires between pellets (formerly Aii).
Ab4 reverse initial mark cross fourchée; annulets between pellets (formerly Aiv).

There is as yet no evidence for the significance of the crown and cross initial marks, nor indeed any certainty that they had any significance at all. Evidence does not support a theory that the change of initial mark denoted a reduction in weight or fineness. There is no significant difference in weight between coins of the various sub-groups from Leith. The average weights are as follows: Aa1 0.48g (7.41gr); Aa2 0.46g (7.10gr); Ab1 0.47g (7.25gr); Ab2 0.48g (7.41gr); Ab3 0.44g (6.80gr); Ab4 (one coin only) 0.51g (7.87gr). Weights of individual coins range from 0.24g to 0.69g, both lightest and heaviest belonging to class Ab3, but in every group apart from the single coin Ab4 half or more of the coins fall within the weight range 0.41–0.50g. The average weight for all the class A pennies is 0.45g (6.85gr), giving a figure of 68.73 coins per Scottish ounce of billon. On the basis of an assumed loss of weight from each coin as a result of wear, corrosion and cleaning, an original yield of c. 60–65 coins per Scottish ounce of billon may be postulated. As in the case of the James II pennies, it was not considered worth while to subject these coins to metallurgical analysis. In any case there is evidence from die-linking to suggest that the use of the crown and cross initial marks may have overlapped considerably.

A number of aspects of the class A pennies may assist in the formulation of a relative chronology for the various sub-groups, namely (a) the occurrence of obverse die-links between coins of different reverse types (b) evidence of wear or deterioration of obverse dies which are associated with more than one type of reverse, and (c) the presence or absence of the B for R convention on coins of the various sub-groups. (The latter is often found on the early mullet groats of James III.) In addition, the number of reverse dies represented in relation to the number of coins in each sub-group may give an indication of the scale on which coins of each sub-group may have been struck. It must be emphasized, however, that not enough coins are yet available for any such study to produce conclusive results.

An analysis of the die-links between the sub-groups (omitting the single coin of Ab4, which has no link with any other coin) reveals that coins of Ab3, the largest sub-group, containing about half the class A pennies at Leith, are linked with coins of all four of the other types, but that Ab3 forms a link between two otherwise mutually exclusive pairings—Aa1 with Ab2 and Aa2 with Ab1 (Fig. 3 and Table 2). These combinations are somewhat surprising, in that

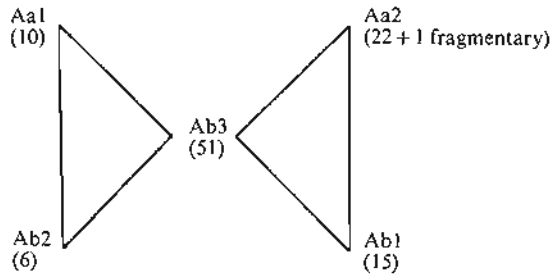


FIG. 3 Schematic representation of die-linked sub-classes of James III pennies

pennies with plain reverse and crown initial mark are linked with those with points reverse and cross initial mark, and that coins with points reverse and crown initial mark are linked with those with plain reverse and cross initial mark. This is not at all what one would expect if the initial marks or reverse types were of any significance. This picture is reinforced if links between obverse dies are tabulated (Table 3), and a number of potentially significant aspects of the class A series are revealed.

TABLE 2.

The frequency of obverse die-links between James III pennies of different sub-classes

	Obv. associated with:						
Coins	Aa1	Aa2	Ab1	Ab2	Ab3	*No outside link*	*Total*
Aa1		0	0	8 80%	10 100%	0	10
Aa2	0		22 100%	0	3 13.6%	0	22
Ab1	0	7 46.7%		0	11 73.3%	1 6.67%	15
Ab2	6 100%	0	0		6 100%	0	6
Ab3	5 9.8%	5 9.8%	13 25.5%	1 2%		33 64.7%	51

TABLE 3.

The frequency of obverse dies which are common to more than one sub-class of James III pennies

Obv.	*Associated with:*						
dies	Aa1	Aa2	Ab1	Ab2	Ab3	*No outside link*	*Total*
Aa1		0	0	1	2	0	2
Aa2	0		3	0	1	0	3
Ab1	0	3		0	4	1	7
Ab2	1	0	0		1	0	1
Ab3	2	1	4	1		13	19

First, almost all the coins of the two smallest sub-groups in the Leith hoard, Aa1 and Ab2, were struck from a single obverse die (Nos 253–60 and 301–06), and this obverse also occurs on one coin of Ab3 (No. 349). Only two coins of Aa1 (261 and 262) were struck from a different obverse die, and this also occurs on four coins of Ab3 (313–16). Second, all twenty-two of the complete coins of Aa2, struck from three separate obverse dies, are linked with coins of Ab1, and one die also appears on coins of Ab3 (324–28). Only seven of the fifteen coins and three of the seven obverse dies of Ab1 are involved in links with Aa2, however, whereas eleven coins from four obverse dies are linked with Ab3. Third, thirty-three of the fifty-one coins of Ab3 and thirteen of its nineteen obverse dies have no links with other sub-groups at all.

These figures, viewed in isolation, would allow the possibility that Aa1 and Ab2 were amongst the earliest issues of class A, and the combination of the small number of coins of

TABLE 4.

Number of coins and reverse dies of each sub-class of James III pennies

Type	*No. of coins*	*No. of rev. dies*	*Coins per die*
Aa1	10	1	10
Aa2	22	2	11
Ab1	15	4	3.75
Ab2	6	1	6
Ab3	51	15	3.40

these types in the hoard with the comparatively high number of coins per die (Table 4) indicates that these issues were probably fairly short-lived. If the first supposition were correct, the presence of coin 349 would suggest that the issue of type Ab3 might also have commenced fairly early. Continuing this hypothesis, types Aa2 and Ab1 probably appeared after the cessation of Aa1 and Ab2, as there are no obverse die-links. Aa2, of which there are twenty-two examples in the hoard but from only two reverse dies, may also have been fairly short-lived, but Ab1, the fifteen examples of which from Leith revealed seven obverse and four reverse dies, may have continued somewhat longer. In this context it may be appropriate to draw attention to a very small die-flaw which occurs at the right-hand end of the crown on the obverse of two coins of Ab1 (291 and 292). This flaw is not detectable on any of the Aa2 coins struck from the same die (263–80), and it may therefore be surmised that the Ab1 coins were struck later. Their general appearance suggests that the die may have been fairly worn by the time it was used for these two coins. Pennies of type Ab3, which had apparently formed part of the coinage from fairly early in the period of issue, seem to have constituted an increasing proportion of the new issues as time progressed and to have represented eventually the sole type being minted.

A certain amount of confirmation of these theories can be obtained from a study of the presence or absence of B for R in the legends of the various coin types (Table 5), providing of course that a date of 1470–71 is accepted for the introduction of this convention. (Not all legends are sufficiently clear for the presence or absence of B for R to be determined, and all statements made on this subject must be qualified by an acknowledgement of this uncertainty. In the list of full descriptions of the coins, B for R is shown only where this has been definitely identified.) It does not occur at all on coins of types Aa1 and Ab2, except on the obverse of two pennies of Aa1 (261 and 262). These were struck from an obverse die more associated with type Ab3, however, and it is therefore possible that these two coins represent a re-use of old reverse dies. A slight amount of damage to the obverse die, in the area of the saltire stop

TABLE 5.

Definitely attested occurrence of B *for* R *on coins and dies of the sub-classes of James III pennies*

Type	*Coins*	*Obv. dies*	*Rev. dies*
Aa1	2 20%	1 50%	0
Aa2	0	0	0
Ab1	5 33.3%	1 14.3%	1 25%
Ab2	0	0	0
Ab3	34 66.7%	6 46.2%	7 46.7%
Ab4	1 100%	1 100%	0

between GBA and BEX in the legend, appears on the Aa1 coins but not on those of Ab3, indicating that this particular obverse die was used first for Ab3 coins and that the two Aa1 specimens represent a subsequent, possibly unintentional, re-use of an old reverse die. B for R does not occur on pennies of type Aa2, but does on five coins of Ab1 (295–299). These, which were all struck from obverse dies also used for Ab3, may represent later issues of Ab1. No less than thirty-four of the fifty-one coins of Ab3 from Leith show the use of B for R, involving six of the thirteen obverse and seven of the fifteen reverse dies. It can perhaps be suggested, therefore, that types Aa1, Ab2 and Aa2 belong to the period c. 1465–1470/1 and that types Ab1 and particularly Ab3 were introduced before the end of this period and continued beyond it.

A previously-noted detail which might have been of great assistance in assigning some of the class A pennies to the earliest phase of this coinage must unfortunately be regarded as of somewhat dubious value. In discussing the Aa1 penny with saltires on the obverse, Murray and Stewart observed that the small letter R on both dies was the same as the letter found on a type IV groat of the crown groat coinage.[20] If this could be proved, it would indicate that the penny in question, and therefore presumably all those others on which the same letter appeared, were probably contemporary with the last phase of the crown groat coinage and not with the James III mullet groat issues. The same letter R can be distinguished on a number of coins from the Leith hoard, in particular on those of classes Aa1 and Ab2, which in any case seem likely to be the earliest issues. It is therefore unfortunate that the R can not definitely be identified as that used on the type IV groat, as the latter has a pronounced backward serif at the base of the vertical stroke which does not appear on any of the penny dies. It is of course possible that this part of the punch had been broken off before it was used to manufacture penny dies, but this can not be assumed to be the case. The forms of the two letters are certainly very similar and distinctive, but it would be necessary to find an example of the broken form on a type IV groat before the two could definitely be identified as the same.

The position in the series of type Ab4, with annulets between the pellets on the reverse, is not yet clear. Only three examples are known (Rhoneston 41 and 42 and Leith 358) and all are from the same obverse and reverse dies. B for R is used on the obverse, which does not occur on coins of any other type, and it is possible that Ab4 was a late and short-lived variety of class A, but the scarcity of these coins in the Glenluce and Rhoneston hoards, both buried much later than that from Leith, renders this far from certain.

The Significance of Individual Coins

English silver (Nos. 1–10)

Of the two Edward III half-groats, number 1 is considerably less worn than 2 and is most unlikely to have been in continuous circulation for 120 years. Of the five Henry VI coins, one groat (No. 4) and one half-groat (8) are in notably better condition than might have been expected, given their age at the time of burial.

Scottish silver (Nos. 11–26)

The half-groat of Robert III and the groat of James I both display a degree of wear commensurate with continuous circulation until the deposition of the hoard. One James II groat (No. 22) is a mule of class III/II. The obverse shows reversed C instead of D and therefore belongs fairly early in the class III series. No. 26 is a variant of the late class IV, first identified by Stewart and Murray.[21] It has the distinctive features of an unjewelled crown on the obverse and beaded circles on the reverse, but has saltire stops and saltires between the pellets.

[20] 'Unpublished Scottish Coins IV', p. 157, no. 55 for the groat; 'Unpublished Scottish Coins V', p. 171, no. 58 for the penny.

[21] 'Unpublished Scottish Coins IV', pp. 150 and 157–59.

James I billon (Nos. 27–32)

The group A Inverness penny (27) appears to have been struck from the same obverse die as an earlier example recorded by Stewart.[22] Neither of these coins appears to have a saltire after the first letter of the king's name, a feature which occurs on Burns 8, Fig. 427, although Stewart identified B 8 and his own specimen as being from the same obverse die.

James II pennies

First issue and first/second issue mules (Nos. 33–37)

Of the five coins bearing the obverse of the rare first issue, only No. 33 also bears the normal reverse of this issue. The others are all mules with second issue reverses. No. 34 is a further example of the type recognized at Glenluce (15) and Rhoneston (10), which has the crown and pellets reverse now classified as belonging to type Ai of the second issue. No. 35 has the same reverse as occurs on two coins of type Aii (49 and 49a), but the reverse of 37 is too worn for reliable die-linking. No. 36 has a reverse of the Perth mint, and the combination of this with the first-issue obverse indicates that this mint must have been in operation during the earliest phase of the crown groat coinage. Previously it was considered that minting at Perth took place only during a fairly short period towards the end of the series, as the only known Perth groats share obverse dies with both Roxburgh and Edinburgh. The same Perth reverse die as on No. 36 is also found on five type Bi pennies from Leith (111, 179–182), as well as on Glenluce 22 and Rhoneston 16, but there is no certainty that these coins also belong to the earliest period. The die may have been stored for a long period and used only occasionally when circumstances required.

Type Ai (No. 38)

This is the only example from Leith of the type now classified as Ai, having a second-issue obverse and a crown and pellets reverse. Both obverse and reverse are from the same dies as the only other known specimen of this type (Rhoneston 10).

Type Aii (Nos. 39–49a)

All these coins are from the same obverse die (B 3a, Fig. 553A), and there are few reverse die-links with other types. The early position of this type in the penny series is established by the reverse die-links of 49 and 49a with the mule coin 35.

Type Bi (Nos. 50–183)

This large group of coins has been divided up in the catalogue according to the presence or absence of saltires on the obverse and reverse, although there seems at present to be no significance in this. The type appears to have been produced continuously throughout most of the period of issue of the crown groat coinage pennies, and few of the coins can be closely dated within this period. Those which have die-links with datable types include No. 164, the reverse of which is from the same die as 41 of type Aii, and Nos. 136 and 148–150, which have reverse links with Ci coins of c. 1460. A broken E, very similar to that on the Aii pennies, is found on various Bi dies, including the obverse of Nos. 68–77, 79, and 102–108, and the reverse of Nos. 61–67, 72, 73, 90–92, 102, 103, and 127–132.

There is evidence of damage to one reverse die used for types Bi and Bii. It appears on nine Bi coins (68–70, 93–97, 101) and three Bii (201–203), and the third quarter of the legend became almost totally obliterated at some stage of its use. Of the coins where the relevant area remains legible, the die is shown whole on 94, 95 and 101 and broken on 68, 69, 93, 201 and 203. Nos. 93, 94 and 95 are from the same obverse die.

There are six Bi pennies of the Perth mint, five of which have reverse die-links with the early mule, No. 36, but it is possible that this die was used intermittently over a fairly long period. There are no visible signs of deterioration of the die on any of the coins. The Perth obverse die

[22] I. H. Stewart, 'Some Unpublished Scottish Coins', *NC* 6th ser. 15 (1955), 11–20 (pp. 14–16, no. 9).

used for Nos. 178–182 is also represented by one Edinburgh coin (152), but this one worn coin is not enough to give any indication of damage or wear to the die. The obverse die used for No. 111 at Perth appears on a total of twenty-two Edinburgh coins, and in this case there is much more reliable evidence. Of the fourteen coins coupling this obverse die with a saltire reverse (112–125), the majority indicate that the obverse die was still fairly sharp and clear when they were struck, as is the case with 111. These coins include a group of four (116–119) which have a reverse die-link with 152, which was also struck from an obverse die used at Perth. Several of these saltire reverse coins, and all eight from the same obverse die and with plain reverse (60–67), appear to have been struck when the obverse die had become worn almost flat. All this suggests that the two obverse dies were used first at Perth, then taken to Edinburgh, where they were used until they became completely unfit. None of the Edinburgh pennies struck from these obverses is linked with the type C coins which belong to the period of the Roxburgh issues, and as these and the first issue obverse are the only penny obverse dies known to have been used at Perth, the evidence available at present suggests that pennies may not have been struck at Perth at all at the time of the minting of the late, Roxburgh-linked groats.

Neither of the Aberdeen pennies (162–163) has any obverse or reverse links with other coins in the hoard.

Two Edinburgh pennies of type Bi are of notably abnormal appearance. No. 110a, which has a plain obverse and reverse and a clear crown initial mark, displays a broad, squat portrait with almost no trace of the characteristic hollowing of the upper part of the chest. The crown has a distinctive outward curve at the right-hand side, and immediately to the left of it is a lis (or trefoil), possibly the result of an addition to the die.

The portrait on No. 136a has narrow and irregular shoulders and a very prominent and stylized cross-lock on the left side. The crown has a similar outward curve on the right side to that on 110a, and there is an indistinguishable symbol to the left of it, again possibly an addition to the die. The initial mark is illegible, but this penny is almost certainly from the same obverse die as an annulet reverse coin which was formerly in the Lockett collection (sale XI, part of lot 854) and which is now in the Stewart collection (see above, p. 83).[23] This coin has a crown initial mark. If the annulet reverse was an early experimental type, as suggested by Stewart when discussing Glenluce 16, this obverse must also be early in the series.[24] Leith 136a has saltires on the reverse, and the reverse lettering is very small and neat, resembling that usually found on class C pennies of James III.

Type Bii (Nos. 184–209)

Only two obverse dies are represented in this group of twenty-six coins without obverse initial mark. Twenty of them (184–203) are from the same die as Rhoneston 13, the obverse of which is mostly illegible, and have a double saltire stop above the centre of the crown. There is no definite evidence for the position of these coins within the penny series. A broken E very similar to that on the Aii pennies occurs on the reverse of Nos. 197–200, but this also occurs on a penny of the late type Cii (232). Nos. 204–209 are from a previously unrecorded obverse die, with nothing between the end and the beginning of the legend, and a reverse link between 209 and a Ci coin (225) suggests that these Bii coins may be fairly late issues.

Type Biii (Nos. 210–214)

No pennies with obverse initial mark lis have previously been identified, but the five specimens of this type from Leith probably belong fairly late in the series. The presence of a lis may in itself be an indication of this, as it appears elsewhere only on the demonstrably late type C pennies, but a further piece of evidence is provided by the reverse die-linking of 210 with 206 and 207 of type Bii. No. 209, from the same obverse die as 206 and 207, is itself linked with a

[23] I am grateful to Mrs Murray for pointing out this die-link and for showing me a photograph of the Lockett coin.
[24] 'The Glenluce Hoard', p. 371.

Ci coin, as already noted. Nos. 210–212 and 214 are all from the same obverse die. The initial mark on 213, from a separate die, is fairly indistinct, but it appears to be a lis.

Type B, uncertain initial mark (Nos. 215–223)

No. 218, of the Aberdeen mint, appears to be either a mule of a James I obverse and a James II reverse or, more probably, to have been struck from a severely bungled obverse die. The bust is very worn, but it appears to be fairly crude, and the crown is tilted to the left. The legend is executed in large, badly-formed letters and contains a large double pellet stop. The reverse, on the other hand, is an orthodox James II saltire type, similar to B 8a, Fig. 556A.

Type Ci (Nos. 224–229)

All six of these coins (five Edinburgh and one Roxburgh) are from the same obverse die (B 6a, Fig. 555A), and it can now be stated definitely that the final part of the legend reads SCOTRVM, and that there is no initial mark at all.[25] It is generally considered that this obverse die must have been used first at Roxburgh and subsequently transferred to Edinburgh, but most of the Edinburgh pennies have a much sharper obverse than that from Roxburgh. In addition, both the known specimens of Roxburgh penny (Leith 226 and a coin in the National Museum of Antiquities of Scotland[26]) have an obverse considerably weaker than the reverse. Clearly there are not enough coins available for study for definite conclusions to be drawn, but so far the coin evidence alone would support the theory of a transfer of the die from Edinburgh to Roxburgh rather than in the opposite direction.

Type Cii (Nos. 230–235)

The six coins of this type from Leith (Nos. 230–235) are all from the same obverse die and are of a previously unrecorded variety, with lis beside and below the bust and with a lis initial mark. The only reverse die-link outside the group is of 235 with 224 of type Ci, which confirms the late position in the series which the presence of lis would suggest. A broken E, very similar to that on the type Aii pennies, occurs on the reverse die of 232. If these letters were indeed put in from the same punch, this would be conclusive evidence of the longevity of such punches and would indicate that they can not be used for the close dating of dies. If, as seems more likely, the letters result from two separate, but very similar, punches, this must equally be seen as an argument for considerable caution in the use of die-punches to formulate a relative chronology for dies.

The reverse of Nos. 233 and 234 has the previously unrecorded feature of a lis stop in the legend.

James III class A pennies

Class Aa1 (Nos. 253–262)

These are the coins with reverse initial mark crown and nothing between the pellets, previously recorded only in the form of Glenluce 24 and of the ex-Lockett penny with saltires on the obverse. All ten of these coins from Leith are from the same reverse die as the two previous specimens, and Nos. 253–260 are from the same obverse as Glenluce 24. Nos. 261 and 262 are from an obverse die with B for R in the legend and may represent a later re-use of the reverse die.

Class Aa2 (Nos. 263–285)

These are all of a previously unrecorded type, with reverse initial mark crown and points between the pellets.

Class Ab1 (previously known as Aiii) (Nos. 286–300)

On the reverse of Nos. 286–294 there is a small die-flaw on one of the pellets in the third quarter (relief on the coins, incuse on the die). This is very well defined on 286–290, which are

[25] Previously it was considered that the final M might have been a crown initial mark; see 'Unpublished Scottish Coins IV', p. 160 and note 2.

[26] 'Unpublished Scottish Coins IV', p. 160, no. 57.

from the same obverse die, less so on 293, and had been almost totally removed by blocking before the striking of 291 and 292. (On 294 this part of the coin has been worn flat.) This progression gives a clue to the relative chronology of the various obverse dies represented. The earliest coins are from a die linked with type Ab3 and the latest from a die linked with Aa2. This is not in itself very informative, except insofar as it confirms the fact that the crown initial mark is not an indication of early date, but it may be worth noting for future reference.

Class Ab2 (Nos. 301–306)

These six coins, all from the same obverse and reverse dies, are of the previously unrecorded type with reverse initial mark cross and points between the pellets. The obverse die is the same as that for almost all the coins of class Aa1 (Leith 253–260 and Glenluce 24), and the reverse die is unusual in having a double pellet stop at the end of the third quarter of the legend.

Class Ab3 (previously known as Aii) (Nos. 307–357)

This is by far the largest group of class A pennies from Leith, containing fifty-one of the 106 specimens and with fifteen different reverse dies. This suggests a fairly extensive issue, and the die-linking of No. 349 with an obverse common to classes Aa1 and Ab2 points to a fairly early date of introduction. It is possible, however, that this isolated die-link is the result of a later re-use of an early obverse die.

Class Ab4 (previously known as Aiv) (No. 358)

The single coin of this class from Leith is from the same obverse and reverse dies as the two other known examples (Rhoneston 41 and 42). Since there are no obverse links with any other classes, the position of these coins in the series is uncertain, but the use of B for R in the obverse legend argues against a date earlier than 1470. The issue was apparently very small.

CATALOGUE OF THE COINS

(B = E. Burns, *The Coinage of Scotland* (1887). G and R = coins in the Glenluce and Rhoneston hoards. NMAS = National Museum of Antiquities of Scotland, Edinburgh.)

All legends are reproduced in the type-face letters available. It should be noted that this is not always an indication of the exact form of the letters, especially in the case of 'G' on pennies, which is often a closed letter. All abbreviations of 'and' on groats and half-groats are represented by either ȝ or ⁊, although the exact form of this symbol on the coins often approximates to a reversed lower case f. In the case of pennies of James III, where the convention of B for R often occurs, B is shown in the catalogue only where its presence can definitely be attested. In cases of doubt, R is shown.

Only one example of the products of each obverse and reverse die is illustrated (except where damaged and undamaged versions of the same die are included). The silver coins illustrated are denoted by an asterisk beside the catalogue number. Each entry in the catalogue of the billon coins is followed by an asterisk and two numbers, these indicating the illustrated coins of which the obverse and reverse respectively correspond to the coin(s) described in that particular entry (e.g. 51–52 *59/174, indicating that the dies used for Nos. 51 and 52 are illustrated by the obverse of No. 59 and the reverse of No. 174). Where the only coins from a particular die are in very poor condition, these are not illustrated at all.

ENGLISH	Weight gm
*1. Edward III, London half-groat, 4th coinage type B (?1351)	2.00
*2. Edward III, London half-groat, 4th coinage type C (?1351–52)	1.58
*3. Henry V, York penny of Archbishop Bowet (1407–23), type uncertain [rev. only illustrated]	0.84

		Weight gm
*4–*5.	Henry VI, Calais groats, rosette-mascle issue (1427–30)	3.75, 3.57
*6–*7.	Henry VI, Calais half-groats, annulet issue (1422–27)	1.75, 1.56
*8.	As 6 and 7, but with annulet in 3rd qtr of rev. only	1.76
*9.	Henry VI, Durham penny, uncertain type. (Obv. has pellets to left and right of crown, but it is not clear whether there is a symbol on the breast. Obv. therefore seems to correspond to North 1511 or 1522 (1445–60).[27] The rev., however, has no rings in the centre and has the mint name in the form DVNOLIN, and is therefore similar to class IV of the heavy coinage of Edward IV (North 1543), dated 1461–64. Perhaps a mule. The coin is apparently similar to that described by Hawkins, p. 242, no 8.[28])	0.67
*10.	Edward IV, London halfpenny, light coinage, Blunt and Whitton type Xa, Brooke group VI.[29] (North, following the Blunt and Whitton classification, dates type X to 2 March 1469–mid 1470; Brooke ascribes his group VI to 1470.)	0.47

SCOTTISH SILVER (Edinburgh groats unless stated)

Robert III (1390–1406)

*11. Perth half-groat, heavy coinage, 2nd issue
obv. [ ]ꝛRTVS[ ]COTO[ ] (very worn)
rev. VILLAꝛDE|PER|Th[ ];+DNSP|TECTOR|MS[ ]|TORMN From same die as a coin from the Lockett collection now in the NMAS (ref. 1957.304) [rev. only illustrated] 1.06

James I (1406–37)

*12. 1st variety: obv. die as B 458A: rev. die probably as B 20c, which Burns did not illustrate 2.13

James II (1437–60)

*13. 2nd coinage, 1st issue: obv. die as B 517
rev. +ꝛVI|LLA:|EDIN|BVRG; DNS:PTE|CTOR:ME|Z:LIBER|ATOR:ME crowns in 2nd and 4th qtrs; P originally punched in reversed and inverted, then corrected [rev. only illustrated] 3.61

*14. 2nd coinage, 1st issue: obv. die as B 516
rev. +ꝛVI|LLA|EDIN|BVRG; DNS:P:TE|CTORME|:Z:LIBER|ATOR:ME crowns in 1st and 3rd qtrs; P originally punched in reversed and inverted, then corrected 3.55

*15. 2nd coinage, 1st issue: obv. die as 14
rev. ꝛ+ꝛVI|LLA|EDIN|BVRG; ATORME|DNS:P:TE|CTOR:ME|Z:LIBER crowns in 2nd and 4th qtrs; P originally punched in reversed and inverted, then corrected [rev. only illustrated] 3.57

*16. 2nd coinage, 2nd issue, type I
obv. apparently from same die as B 10, which Burns did not illustrate; from same die as 3 coins in the NMAS:- 2 from the Perth hoard (museum refs. XI.20.29 and XI.20.30) and 1 unprovenanced (L.850)
rev. VILL|A:ED|INB*|VRG:; +DNSPR|TECTOR:M|S:Z:LIBER|ATOR:MS: crowns in 1st and 3rd qtrs; annulet between pellets in 2nd qtr only; stop after INB is a cinquefoil [rev. only illustrated; obv. = 17] 3.64

*17. 2nd coinage issue, type I: obv. die as 16
rev. crown VIL|LA:E|DIN*|BVRG; +DNSPRO|TECTORM|S:Z:LIBER|ATORMS crowns in 1st and 3rd qtrs; annulet between pellets in 2nd and 4th; stop after DIN is a 5-pointed mullet; same die as 2 coins from the Perth hoard in the NMAS (refs. XI.20.28 and XI.20.29) 3.67

*18. 2nd coinage, 2nd issue, type II: obv. die as B 531
rev. crown VIL|LA:E|DINB|VRG; crown DNS:P·|TECTORM|SZLIBE[R]|[A]TORMS; crowns in 1st and 3rd qtrs; annulets between pellets; stop after DNS comprises a saltire above a horizontal comma; same die as a coin from the Whitburn hoard in the NMAS (ref. XII.21.9) [rev. only illustrated] 3.62

[27] J. J. North, *English Hammered Coinage*, vol. II (1960).
[28] E. Hawkins, *The Silver Coins of England* (1887).
[29] C. E. Blunt and C. A. Whitton, 'The Coinages of Edward IV and Henry VI (Restored)', *BNJ* 25 (1945–48), 161 and Plate VIII, 16; G. C. Brooke, *English Coins* (1966).

		Weight gm
*19.	2nd coinage, 2nd issue, type II obv. apparently from same die as B 19a, which Burns did not illustrate; same die as 6 coins in the NMAS, including 1 from the Perth hoard (ref. XI.20.36) and 3 from the Whitburn hoard (XII.21.9, 10 and 11) rev. crown VIL|LAЄD|IПB|VRG; crown DПS:P:|TЄCTORM|SƵLIBЄR|ΛTORMS; crowns in 1st and 3rd qtrs; annulets between pellets; stop after DПS is as that on 18; same die as a coin from the Whitburn hoard in the NMAS (ref. XII.21.11)	3.65
*20.	2nd coinage, 2nd issue, type II: obv. die as B 532 rev. crown VIL|LAЄ|DIПB|VRG; crown DПSPRO|TЄCTORM|SƵLIBЄR|ΛTORMS; crowns in 1st and 3rd qtrs; annulets between pellets [rev. only illustrated]	3.25
*21.	2nd coinage, 2nd issue, type II obv. die as B 22a (not illustrated by Burns), but with double saltire stop between IACOBVS and DЄI; same die as 2 coins in the NMAS:- 1 from the Perth hoard (ref. XI.20.39) and 1 unprovenanced (1960.14) rev. crown VIL|LAЄD|IП:B:|:VRG:; crown DПS:P:|TЄCTOR:|MS:Ƶ:LIB|ЄRΛTOR; reversed C for D; crowns in 1st and 3rd qtrs; annulets between pellets; stop after DПS has a horizontal comma between the two saltires	3.66
*22.	2nd coinage, 2nd issue, type III/II mule: obv. die as B 538 rev. crown VIL:|LAЄD:|IП:B:|:VRG:; crown DПS:P:|·TЄCTOR:|MSƵ:LIB|ЄRΛTOR; reversed C for D; crowns in 1st and 3rd qtrs; annulets between pellets; stop after DПS is as that on 21; die very similar to 21, with many of the letters from the same punches	3.68
*23.	2nd coinage, 2nd issue, type III obv. crown IACOBVSDЄIGRA:RЄX:SCOTTOR:VM:; saltires to l. and r. of neck; same die as 4 coins in the NMAS (refs. 15, 1957.334 (ex Lockett collection), 1960.15, 1960.16) rev. crown VIL|:LAЄ:|:DIПB|:VRG; crown DПS:P:|TЄCTORM|SƵLIBЄR|ΛTORMS; reversed C for D; crowns in 2nd and 4th qtrs; saltires between pellets; same die as 2 coins in the NMAS (refs. 15, 1957.334)	3.72
24.	2nd coinage, 2nd issue, type III: obv. and rev. dies as B 547	3.63
*25.	2nd coinage, 2nd issue, type III: obv. die as B 543 rev. crown VIL|LAЄ:|DIПB:|:VRG; crown DПS·P:|TЄCTORM|S[ ]ЄR|ΛTORMS; crowns in 2nd and 4th qtrs; saltires between pellets [rev. only illustrated]	3.74
*26.	2nd coinage, 2nd issue, type IV obv. +IACOBVSDЄI:GRACIAЄXSCOTORVM: rev. +VIL':LAЄ:|DIПB|VRG'; +DПSPT|ЄCTORƵ:|MЄVSƵ:L|IBЄRΛT; crowns in 2nd and 4th qtrs; saltires between pellets	3.74

SCOTTISH BILLON (Edinburgh pennies unless stated)

James I (1406–37)

27.	Inverness penny, group A: obv. +IACOBVSDЄ[ ]Є–; probably same die as USC 930: rev. VILL|AIП|ПЄR|[ПJI[S–] (*27/27)	0.75
28.	number not used	
29.	Group B: obv. illegible: rev. [+]VIL|[L]A lis(?)Є|[ ]|[ ] points between pellets (*–/–)	0.42
30.	Aberdeen penny, group C1: obv. die as B 479: rev. +VIL|[ ]|[A]BЄR|DQ[ ] (*–/30)	0.53
31.	Aberdeen penny, group C1 or C2: obv. [ ]ACOBV[ ]RAC[ ]:R[ ]; ? annulet to l. of neck: rev. [+]VIL|LA:[A]|[ ]|DOП[ ] (*31/31)	0.44
32.	Edinburgh halfpenny, group A: obv. +[IA]C[ ]RV: rev. [ ]LAЄ|DIПR|V[ ] (*32/32)	0.37

James II (1437–60)

33.	2nd coinage, 1st issue: obv. and rev. dies as B 518A (*33/33)	0.65
34.	2nd coinage, 1st/2nd issue mule: obv. die as 33: rev. die as 38 (*33/38)	0.68
35.	2nd coinage, 1st/2nd issue mule: obv. die as 33: rev. die as 49 (*33/35)	0.77
36.	2nd coinage, 1st/2nd issue mule of Perth: obv. die as 33: rev. die as 111 (*33/111)	0.64
37.	2nd coinage, 1st/2nd issue mule: obv. die as 33: rev. [ ]IL|[ ]E|[ ]|[ ] (*33/37)	0.64

[30] 'Some Unpublished Scottish Coins', pp. 14–16.

		Weight gm
	Second coinage, second issue	
	Type Ai	
38.	obv. die as B 553A, now read as +IAGOVSDEIGRAREX*TTORV; broken E; stop after REX appears to be a 5-pointed star or mullet rev. +VIL|LA*E)|DIN|BVRG; same die as G 15 and R 10; the presence of a star or mullet stop on the obv. increases the probability that the rev. stop may be of the same type rather than a saltire. (*39/38)	0.71
	Type Aii	
39–40.	obv. die as 38: rev. VIL:|[ ]E|DIN:|V[ ]G: (*39/39)	0.68, 0.67
41.	obv. die as 38: rev. V[IL:]|[LA]|[ ]V|RGh; die as 164, from which legend has been partially reconstructed (*39/164)	0.70
42–46a.	obv. die as 38: rev. :VIL|LAE·|DINB|VRG (*39/42)	0.67, 0.64, 0.62, 0.55, 0.53, 0.45
47–48.	obv. die as 38: rev. die as B 553A[31] (*39/47)	0.60, 0.57
49–49a.	obv. die as 38: rev. VIL|LAE|DIN|[BVR_]; same die as 35, from which legend has been partially reconstructed (*39/35)	0.81, 0.53
	Type Bi (plain obv. and rev.)	
50.	obv. crown [IAGO]REIGRAREXSCO[ ]M; die as 133, from which first part of legend has been reconstructed rev. VIL|[ ]E|DIN[ ]|[ ]G (*50/50)	0.50
51–52.	obv. die as B 554, 554A, now read as crown I[AG]OBEI[GRA_LIX_IA] rev. die as B 554, 554A, now read as VIL|LAE|DIB|VIG (*59/174)	0.76, 0.65
53–56.	obv. die as 51: rev. VIL|LAE|DIN|VRG; same die as G 17[32] (*59/53)	1.02, 0.86, 0.66, 0.45
57–58.	obv. die as 51: rev. VIL|LAE|DINB|VRG (*59/58)	0.81, 0.60
59.	obv. die as 51: rev. V[IL:]|L[AE]DINB|[VR]G; same die as 167–173, from which legend has been reconstructed (*59/168)	0.52
60.	obv. die as B 556 (N.B. the D is reversed): rev. die as 59 (*118/168)	0.71
61–67.	obv. die as 60: rev. VIL| L AE|DINR|VRG; broken E; large space either side of L (*118/66)	0.83, 0.76, 0.75, 0.73, 0.68, 0.53, 0.46
68–70.	obv. die as B 553, now read as crown IAGOVS:DETRA[GITARE]; broken E rev. die as B 552A now read as :VIL:|[LAE]|[DINB]|·VRG; legend reconstructed from nos. 97 and 101 (same die) (*70/69)	0.68, 0.66, 0.38
71.	obv. die as 68: rev. illegible (*70/–)	0.74
72–73.	obv. die as 68: rev. [·VI]L:|LAE|DI[N]B|·VRG; same die as 90, 91 and 239, from which parts of legend have been reconstructed (*70/90)	0.76, 0.72
74–77.	obv. die as 68: rev. die as B 553, now read as VIL:|LAE|DINB|:VRG (*70/76)	0.94, 0.76, 0.73, 0.44
78.	obv. crown IA[ ]: (mis-struck): rev. die as 74 (*–/76)	0.72
79.	obv. crown IAEORS:[DEVG_RATX|E]V; broken E; die as 102–108, from which this blundered legend has been partially reconstructed: rev. die as 74 (*102/76)	0.47
80.	obv. die as B 552: rev. die as 74 (*81/76)	0.86
81–89.	obv. die as 80: rev. die as B 552 (*81/81)	0.68, 0.68, 0.65, 0.62, 0.58, 0.55, 0.53, 0.52, 0.49
90–92.	obv. die as 80: rev. die as 72 (*81/90)	0.75, 0.72, 0.68
93–96.	obv. die as 80: rev. die as 68 (*81/69)	0.87, 0.79, 0.66
97.	obv. crown IAGOVSDEI[TRA ..... R]: rev. die as 68 (*97/69)	0.62
98.	obv. die as 97: rev. die as 81 (*97/81)	0.59
99–100.	obv. crown IA[....S:]DEITRAG[I]TAPX[E]: rev. VIL:|LAE·|DIN[ ]:VRG; die as R 19; there are no saltires, but flaws between some of the groups of pellets (*99/99)	0.71, 0.58
101.	obv. die as 99: rev. die as 68 (*99/101)	0.71

[31] This is also the die for R 11, although this was not indicated in the published report. The saltire stop after LAE in the description is actually part of the E from a partially blocked die.

[32] G 17 is also from the same obverse die (B 554). This was not noted in the published report.

		Weight gm
102–103.	obv. die as 79: rev. [⁘VI]L⁘|[⁘LA]E|DIПB|⁘VR[G]; broken E; same die as R 13; blockage at beginning of 4th qtr of legend, but legend completed from no. 189 from the same die (*102/103)	0.81, 0.79
104–107.	obv. die as 79: rev. VIL⁘|⁘LAE|DIПB|[ ]RG; probably same die as R 12 (*102/106)	0.68, 0.66, 0.60, 0.55
108.	obv. die as 79: rev. ⁘V[ ]|[⁘]LAE⁘|[D]IПB|[⁘V]; die as 241, from which legend has been partially reconstructed (*102/241)	0.60
109–110.	obv. crown IAOO[SDVD_AREX.....IO]; die as 126–128, from which legend has been partially reconstructed: rev. die as 57 (*126/58)	0.93, 0.84
110a.	obv. crown [ ]OBVSD[ ]A⁘AREXSCOTOR; unusual bust; lis (?) to left of crown: rev. [ ]L|LA⁘E|DIПB|VRG[ ] (*110a/110a)	0.43
111.	Perth mint: obv. die as 60: rev. VIL|LAD|EPE|RTh; broken E; flaw or possibly single saltire after VIL; obv. and rev. dies as G 22 and R 16 (*111/111)	0.84
	Type Bi (obv. plain, rev. saltires)	
112–115.	obv. die as 60 (B 556): rev. die as B 556 (*118/113)	0.75, 0.67, 0.63, 0.55
116–119.	obv. die as 60: rev. VIL⁘|LA⁘E|DIПB|VRG (*118/118)	0.79, 0.77, 0.74, 0.71
120.	obv. die as 60: rev. [ ]L|⁘L[ ]/[ ]B|⁘VRG; possibly same die as B 555A, but too worn to be certain (*118/-)	0.62
121–124.	obv. die as 60: rev. VIL⁘|LAE|D[ ]|⁘VRG (*118/123)	0.66, 0.65, 0.61, 0.48
125.	obv. die as 60: rev. [ ]|[ ]|DIПB|[ ] (*118/-)	0.61
126.	obv. die as 109: rev. VIL|[ ]|DIПB|VR[G] (*126/126)	0.58
127–128.	obv. die as 109: rev. VIL⁘[L]AE|DIПB|VRG; broken E (*126/127)	0.74, 0.59
129.	obv. die as 97: rev. die as 127 (*97/127)	0.76
130–132.	obv. die as 51: rev. die as 127 (*59/127)	0.99, 0.77, 0.35
133.	obv. die as 50: rev. [⁘VI]L⁘|⁘LAE⁘|DIП[ ]|[⁘VRG] (*50/133)	0.53
134.	obv. die as 50: rev. VIL⁘|[ ]|DIП[ ]|VRG (*50/134)	0.58
135.	obv. die as 50: rev. [ ]|LA[ ]|DIПB|⁘VR[ ] (*50/135)	0.74
136.	obv. die as 50: rev. die as B 555A, now read as VIL[ ]|[ ]A E⁘|DIП[ ]|[VRG] (partly reconstructed from 227) (*50/136)	0.66
136a.	obv. [crown IAOOB...DEIGRAREX_OOTTO[ ]; uncertain mark to left of crown; unusual portrait with right side of crown bending outwards; almost certainly from same die as an annulet rev. coin (ex Lockett collection, part of lot 854) now in Stewart collection. rev. [ ]⁘LAE⁘|DIПB⁘|V[ ]; small, neat lettering; saltires of unusual form. (*136a/136a)	0.48
	Type Bi (obv. and rev. saltires)	
137.	obv. crown [ ]OREIG[ ]VM⁘: rev. ⁘VIL⁘|LAE⁘|[ ]|[ ]G; saltires of an unusual form, like trefoils (*137/137)	0.55
138.	obv. crown [ ]GRAREXSCO[ ]: rev. VIL⁘|[__E⁘]|DIПB⁘|VRG; die as R 20 (*138/138)	0.67
139.	obv. die as B 554C, now read as crown IACOREIGRAREXSCOTRVM: rev. VIL⁘|[ ] DIПB|VRG⁘ (*141/139)	0.76
140–143.	obv. die as 139: rev. die as B 554C (*141/141)	0.79, 0.54, 0.52, 0.45
144.	obv. die as 139: rev. [ ]|[ ]E|DI[ ]|[ ] (*141/144)	0.67
145.	obv. die as 139: rev. VIL⁘|[ ]LAE⁘|D[ ]|[ ]RG (*141/145)	0.53
146.	obv. crown I[ ]ORE[ ]GRAR[ ]: rev. [⁘VIL⁘]|⁘LAE⁘|DIПB|VRG (*146/147)	0.83
147.	obv. die as B 554B, now read as REI: rev. die as 146 (*147/147)	0.83
148–150.	obv. crown IACOREIGRXSCOTRVM⁘: rev. ⁘VIL⁘|⁘LAE|DIПR|VRG (*150/149)	0.65, 0.63, 0.62
151.	obv. die as 148: rev. V[ ]|[ ]|DI[ ]|[ ] (*150/-)	0.71
152.	obv. crown IACOR[SDEGRR.....]; D reversed; same die as 178, from which legend has been partially reconstructed: rev. die as 116 (*178/118)	0.88
153.	obv. crown I[...OR]EIG[RAR]E[X]SCOTRVM: rev. ⁘VIL[ ]|[ ]AE⁘|DIПB|⁘VRG (*156/153)	0.86

		Weight gm
154.	obv. die as 153: rev. die as B 558 (*156/154)	0.79
155.	obv. die as 153: rev. ⁘VIL⁘|LAE⁘|[ ]|[ ]RG (*156/155)	0.76
156.	obv. die as 153: rev. illegible (*156/–)	0.43
157.	obv. crown IAEO[RV‿‿EIGRA]REX[ ]; same die as 168, from which legend has been partially reconstructed; possibly same die as R 18, which is very worn: rev. VIL|[ ]| DI[ ]|[ ]G (*168/157)	0.68
158.	obv. crown IAEOREIGRA[ ]XSEO[ ]RV: rev. [ ]|[ ]E|DINB|VRG (*158/158)	0.69
159.	obv. crown IAEORE[ ]M: rev. VIL⁘|LA[ ]|[ ]|[ ]G (*–/159)	0.62
160.	obv. crown IAEO[ ]RV⁘: rev. die as 126 (*–/126)	0.76
161.	obv. crown IAEO[ ]EXSEOTTRV: rev. [ ]L·|[ ]LAE[ ]|DINB|⁘V[ ] mis-struck (*161/161)	0.55
162.	Aberdeen mint: obv. crown [ ]G[ ]: rev. [ ]IL⁘|LA⁘A|[ ]|DE[ ] (*–/162)	0.51
163.	Aberdeen mint: obv. die as B 556A: rev. [ ]|[ ]|[ ]|DEN (*163/163)	0.75
	Type Bi (obv. saltires, rev. plain)	
164.	obv. die as 148: rev. die as 41 (*150/164)	0.49
165.	obv. die as 148: rev. ⁘VIL·|[ ]|DIN|[ ]G⁘ (*150/165)	0.85
166.	obv. die as 148: rev. [V]|[⁘LA]E⁘|DINB|V[RG]; die as 208, from which legend has been partially reconstructed (*150/208)	0.68
167–173.	obv. die as 157: rev. die as 59 (*168/168)	0.98, 0.77, 0.75, 0.72, 0.62, 0.59, 0.57
174–176.	obv. die as 157: rev. die as 51 (*168/174)	0.78, 0.77, 0.58
177.	obv. die as 139: rev. VIL⁘|[ ]E|[ ]VRG (*141/177)	0.67
178.	Perth mint: obv. die as 152 (and R 17): rev. die as R 17, now partially completed as VIL|[ ]|E⁘PE|RTh (*178/178)	0.63
179–182.	Perth mint: obv. die as 152: rev. die as 111 (*178/111)	0.82, 0.54, 0.48, 0.48
	Type Bi (obv. saltires, rev. uncertain)	
183.	obv. crown IA[ ]ARE X[ ]: rev. illegible (*–/–)	1.05
	Type Bii	
184–195.	obv. ⁘IAEOVSDEITRADIA‿‿XOD; broken E; die as R 13: rev. die as 102 (and R 13) (*200/189)	0.80, 0.79, 0.77, 0.77, 0.74, 0.73, 0.68, 0.67, 0.61, 0.57, 0.54, 0.53
196.	obv. die as 184: rev. ⁘VIL|[ ]|[ ]|⁘V[ ]; broken and corroded (*200/–)	0.54
197–200.	obv. die as 184: rev. die as 72 (*200/90)	0.85, 0.76, 0.65, 0.62
201–203.	obv. die as 184: rev. die as 68 (*200/69)	0.72, 0.64, 0.63
204–205.	obv. IAEOREIGRARE[XS]EOTRVM: rev. VIL|LA[ ]|DIND|VRG (*208/204)	0.62, 0.54
206–207.	obv. die as 204: rev. VIL⁘|⁘LAE⁘|DINB|VRG (*208/206)	0.55, 0.51
208.	obv. die as 204: rev. die as 166 (*208/208)	0.63
209.	obv. die as 204: rev. [⁘V]IL⁘|⁘LAE⁘|[DINB]|VRG; die as 225, from which legend has been reconstructed (*208/209)	0.88
	Type Biii (obv. and rev. plain)	
210.	obv. lis IAEORE[IGRA]REXSE[O. . . .M]: rev. die as 206 (*214/206)	0.63
211.	obv. die as 210: rev. V[ ]|[ ]E|[ ]|VRG (*214/211)	0.92
212.	obv. die as 210: rev. [ ]|⁘LAE|DI[ ]|[ ] (*214/212)	0.35
213.	obv. lis (?) IAEO[ ]R[ ]RVM: rev. VIL⁘|⁘LAE|[ ]|VRG (*–/213)	0.73
	Type Biii (obv. plain, rev. saltires)	
214.	obv. die as 210: rev. [|L·|⁘LAE·|DINB|VRG (*214/214)	0.51

Weight
gm

Type B (initial mark illegible, obv. and rev. plain)

215. obv. [ ]ꝸO[.....R.....]SꝸO[ ]: rev. die as 213 (*215/213) 0.76

Type B (initial mark illegible, obv. plain, rev. saltires)

216. obv. die as 215: rev. VIL|[ ]Ɇ:|[ ]|VR[ ] (*215/216) 0.33
217. number not used
218. Aberdeen mint: obv. [ ]OBV[ ]I:__IΛ:RɆ; large, crude lettering and crude portrait with crown at an angle: rev. [ ]|LΛ[ ]Λ|[ ]|DɆ[ ] (*218/218) 0.57

Type B (initial mark illegible, obv. and rev. saltires)

219. obv. illegible: rev. die as B 554B; N.B. 4th qtr of legend has a single or double saltire stop at the end, and possibly also at the beginning. (*-/219) 0.67
220. obv. [ ]ΛꝸORɆIGRΛ[ ]: rev. VIL:|LΛɆ|DIᑎ[ ]|[ ] (*220/220) 0.51
221. obv. illegible: rev. die as 126 (*-/126) 0.69
222. obv. illegible: rev. die as 133 (*-/133) 0.52
223. obv.[ ]RV[ ]: rev. die as 146 (*-/147) 0.45

Type Ci (rev. plain)

224. obv. die as B 555A, now read as [IΛꝸORɆIGRΛRɆ]XSꝸOTRVᑎ; this die has neither a crown i.m., as suggested by Burns, nor a cross, as suggested in the Rhoneston report: rev. VIL|L[Λ]Ɇ|DIᑎ|BVRG (*225/224) 0.56
225. obv. die as 224: rev. die as 209 (*225/209) 0.46
226. Roxburgh mint: obv. die as 224: rev. [ ]IL:|LΛR·OXBV|RGh[ ]: die as USC 57[33] (*225/226) 0.53

Type Ci (rev. saltires)

227. obv. die as 224: rev. die as B 555A, now read as on 136 (*225/136) 0.55
228. obv. die as 224: rev. [ ]|[ ]|[ ]|VRG; uncertain mark between pellets (*225/-) 0.49
229. obv. die as 224: rev. die as 148 (*225/149) 0.69

Type Cii

230–231. obv. [lis] IΛꝸORɆIGRΛRɆXSꝸOV[ᑎ]: rev. ·VIL:|LΛɆ:|DIᑎB·VRG (*233/230) 0.95, 0.77
232. obv. die as 230: rev. VIL|[ ]ΛɆ|DIᑎB|VRG; broken Ɇ (*233/232) 0.43
233–234. obv. die as 230: rev. VIL lis |LΛɆ|DIᑎB|VRG (*233/234) 0.89, 0.85
235. obv. die as 230: rev. die as 224 (*233/224) 0.56

Unclassifiable (rev. plain)

236. number not used
237. obv. [ ]RɆ[ ]: rev. die as 166 (*-/208) 0.56
238. obv. illegible: rev. die as 166 (*-/208) 0.53
239. obv. [ ]IΛꝸO[ ]: rev. die as 72 (*-/90) 0.68
240. obv. illegible: rev. die as 72 (*-/90) 0.69
241. obv. [ ]IΛ[ ]: rev. die as 108 (*-/241) 0.72
242. obv. [ ]V[ ]: rev. V[ ] [ ] DIᑎB VRG (*-/242) 0.66
243. obv. illegible: rev. die as 59 (*-/168) 0.63
244. obv. illegible: rev. [ ]|LΛ:Ɇ|DIᑎB:[ ] (*-/-) 0.51
245. obv. illegible: rev. die as 51 (*-/174) 0.72

Unclassifiable (rev. saltires)

246. number not used
247. obv. illegible: rev. die as 140 (*-/141) 0.71
248. obv. [ ]V[ ]; uncertain marks in field: rev. VI[ ]|[ ]|S: DIᑎB|VRG (*-/248) large flan 0.74
249. Aberdeen mint: obv. illegible: rev. VIL:|L:Λ B[ ]R DɆᑎ: (*-/249) 0.62

[33] 'Unpublished Scottish Coins IV', p. 160.

		Weight gm
	Double reverse	
250.	Both sides [ ]\[ ]|DI·B|·V[ ]; plain (*250/-)	0.69
	Unidentifiable (James I or II)	
251.	obv. and rev. illegible (rev. plain) (*-/-)	0.48
252.	obv. and rev. illegible (*-/-)	0.38
	James III (1460–88)	
	Class Aa1 (rev. plain)	
253–260.	obv. +IAMOBVS:D:GRA:RE·X:S; die as G 24: rev. crown VIL|LAE|DIN:|BVR·; stop after DIN comprises two short horizontal lines; die as G 24 and USC 58[34] (*258/255)	0.57, 0.55, 0.55, 0.49, 0.48, 0.47, 0.46, 0.36
261–262.	obv. +IAMOB[VS·]D·GBA·BEX; die as 316, from which legend has been completed: rev. die as 253 (*316/255)	0.49, 0.33
	Class Aa2 (rev. points)	
263–280.	obv. +IAMOBVS:D:GRA:RE·: rev. crown VIL|LA:E|DIN:|BVRG (N.B. the stops on both these dies, which have been represented as pellets, are in fact of various shapes, many of them indistinguishable. They may have been intended to be saltires.) (*263/266)	0.59, 0.58, 0.57, 0.54, 0.49, 0.47, 0.46, 0.46, 0.46, 0.44, 0.44, 0.43, 0.43, 0.42, 0.39, 0.38, 0.37
281–283.	obv. +IAMOBVS:D[·GR]A:RE[ ]; die as 295, from which legend has been partially reconstructed: rev. crown VIL|LAE|DIN:|BVRG; no points visible in 4th qtr (*282/281)	0.52, 0.45, 0.31 (broken)
284.	obv. [+I]AMOBVS:D[:GRA]:RES; die as 300, from which legend has been completed: rev. die as 281 (*300/281)	0.54
285.	Fragments of a coin: obv. illegible: rev. die as 263	
	Class Ab1 (rev. plain)	
286–290.	obv. die as B 562A: rev. +VIL|LA·E|DIN·|BVRG (*286/286)	0.54, 0.50, 0.47, 0.47, 0.36
291–292.	obv. die as 263: rev. die as 286 (*263/292)	0.55, 0.43
293.	obv. [ ]AMOBV[ ]GRARE[ ]: rev. die as 286 (*293/286)	0.46
294.	obv. [ ]AMOB[VS]·D·G[RA·RE…]; die as 352, from which legend has been partially reconstructed, and as R 36: rev. die as 286 (*352/286)	0.55
295–298.	obv. die as 281: rev. +VIL|LAE|DIN|BVB (*282/297)	0.45, 0.45, 0.45, 0.43
299.	obv. +IAMOBV[S·D·GBAB EX]·; die as 309 and 311, from which legend has been reconstructed: rev. +VIL|LAE|DI[ ]\[ ] (*307/-)	0.40
300.	obv. die as 284: rev. +VIL|LAE[ ]\[ ]IN|BVRG (*300/300)	0.50
	Class Ab2 (rev. points)	
301–306.	obv. die as 253: rev. +VIL|LAE|DIN:|BVRG; clear pellet stops (*258/303)	0.59, 0.49, 0.48, 0.47, 0.45, 0.39
	Class Ab3 (rev. saltires)	
307–308.	obv. die as 299: rev. +VIL|LA·E|DIN|[ ]; die as R 32 (*307/308)	0.47, 0.41
309–310.	obv. die as 299: rev. +VIL|LAE|DINB|VBG (*307/310)	0.47, 0.35
311–312.	obv. die as 299: rev. [ ]VIL|LAE|DIN|BV[ ] (*307/312)	0.44, 0.34

[34] 'Unpublished Scottish Coins V', pp. 171–72.

		Weight gm
313–315.	obv. die as 261: rev. + VIL|LA·E|DIN·|BVB (*316/313)	0.46, 0.37, 0.24
316.	obv. die as 261: rev. [ ]VI[ ]|LAE|DIN·|BVB· (*316/316)	0.45
317.	obv. + IACOBV[ ]D·G[ ]E: rev. + VIL|LAE|[DIN]|BV[B]; die as R 36 (*–/352)	0.54
318–322.	obv. + I[AC]OBVS·D·GBA·BE[X]·SC: rev. die as 317 (*320/353)	0.56, 0.46, 0.43, 0.42, 0.39
323.	obv. die as 318: rev. + VIL|LA·|EDIN·[BVBG]; die as 333, from which legend has been completed, and as G 26 (N.B. new reading) (*320/333)	0.46
324–327.	obv. die as 281: rev. + VIL·LAE|DIN|BVRG (*282/327)	0.49, 0.49, 0.48, 0.30
328.	obv. die as 281: rev. + V[IL]|L[A·E]|DIN·|BVRG; die as 335, from which legend has been completed (*282/328)	0.52
329–334.	obv. + IACOBVS·D·GRA·RE; die as G 26 (N.B. new reading): rev. die as 323 (and as G 26) (*334/333)	0.69, 0.56, 0.45, 0.45, 0.39, 0.36
335.	obv. die as 329: rev. die as 328 (*334/328)	0.47
336–340.	obv. + IACOBVS·D·GRA·RE·X: rev. die as B 562 and 562A, R 30 and probably G 27 (*339/351)	0.68, 0.51, 0.43, 0.39, 0.39
341.	obv. die as 336: rev. die as 323 (*339/333)	0.28
342–343.	obv. + IA[ ]BVS·D·GBA·BE·XS; die as R 32: rev. + VIL|LAE|DIN|BVB; die as R 33 (*344/343)	0.57, 0.42
344.	obv. die as 342: rev. die as 309 (*344/310)	0.34
345.	obv. [+ I]ACO[ ]·D·GRA·RE·XS: rev. die as 313 (*345/313)	0.45
346.	obv. die as 345: rev. + VIL·[. . . E]|DI[N]|BV[ ]; die as 353, from which legend has been partially reconstructed (*345/353)	0.40
347.	obv. die as B 562: rev. die as 317 (*348/352)	0.44
348.	obv. die as 347 (possible die-flaw in the form of an annulet to l. of crown): rev. die as 336 (*348/351)	0.46
349.	obv. die as 253: rev. + VI[ ]·[ ]A·E|[ ]|BVRG (*258/349)	0.35
350.	obv. die as 286: rev. die as 349 (*286/349)	0.43
351.	obv. + IA[ ]S·D·GRA·RE: rev. die as 336 (*351/351)	0.33
352.	obv. die as 294 (and R 36): rev. die as 317 (and R 36) (*352/352)	0.44
353.	obv. + IACO[ ]EX: rev. die as 346 (*353/353)	0.38
354.	obv. + I[ ]O[ ]: rev. die as 323 (*354/333)	0.45
356.	obv. die as B 563: rev. die as B 563, now read as + VIL|LA·|[ ]|BV[ ] (*356/356)	0.40
357.	obv. [ ]ACOBV[ ]EX[ ]: rev. [ ]·[ ]·DIE|N|BVB (*357/357)	0.34
	Class Ab4 (rev. annulets)	
358.	obv. + IAC[OBSD]|GBA|BEXSC; broken E; die as R 41 and 42: rev. + VIL|LAE|DIN|BV[ ]; die as R 41 and 42 (*358/358)	0.51

PLATE 1

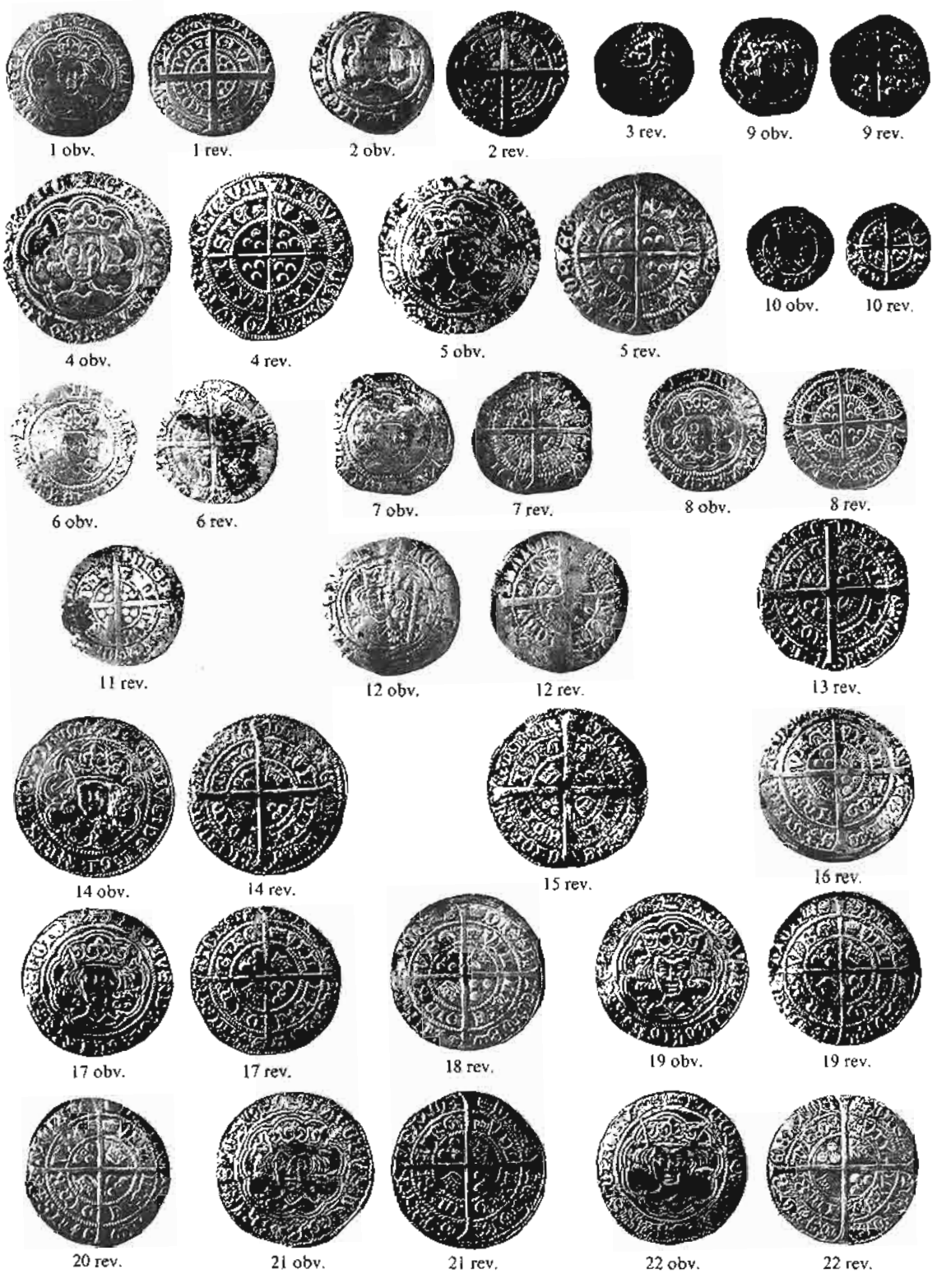

1 obv.
1 rev.
2 obv.
2 rev.
3 rev.
9 obv.
9 rev.
4 obv.
4 rev.
5 obv.
5 rev.
10 obv.
10 rev.
6 obv.
6 rev.
7 obv.
7 rev.
8 obv.
8 rev.
11 rev.
12 obv.
12 rev.
13 rev.
14 obv.
14 rev.
15 rev.
16 rev.
17 obv.
17 rev.
18 rev.
19 obv.
19 rev.
20 rev.
21 obv.
21 rev.
22 obv.
22 rev.

PLATE 2


23 obv.


23 rev.


25 rev.


26 obv.


26 rev.


27 obv.


27 rev.


30 rev.


31 obv.


31 rev.


32 obv.


32 rev.


33 obv.


33 rev.


35 rev.


37 rev.


38 rev.


39 obv.


39 rev.


42 rev.


47 rev.


50 obv.


50 rev.


53 rev.


58 rev.


59 obv.


66 rev.


69 rev.


70 obv.


76 rev.


81 obv.


81 rev.


90 rev.


97 obv.


99 obv.


99 rev.


101 rev.


102 obv.


103 rev.


106 rev.

110a obv.

110a rev.

111 obv.

111 rev.

113 rev.

118 obv.

118 rev.

123 rev.

126 obv.

126 rev.

127 rev.

133 rev.

134 rev.

135 rev.

PLATE 3


136 rev.


136a obv. 136a rev.


137 obv. 137 rev.


138 obv. 138 rev.


139 rev.


141 obv. 141 rev.


144 rev.


145 rev.


146 obv.


147 obv. 147 rev.


149 rev. 150 obv.


153 rev. 154 rev. 155 rev.


156 obv. 157 rev.


158 obv. 158 rev.


159 rev. 161 obv. 161 rev.


162 rev. 163 obv. 163 rev. 164 rev. 165 rev. 168 obv. 168 rev.


174 rev. 177 rev. 178 obv. 178 rev. 189 rev. 200 obv. 204 rev.


206 rev. 208 obv. 208 rev. 209 rev. 211 rev. 212 rev. 213 rev.


214 obv. 214 rev. 215 obv. 216 rev. 218 obv. 218 rev. 219 rev.

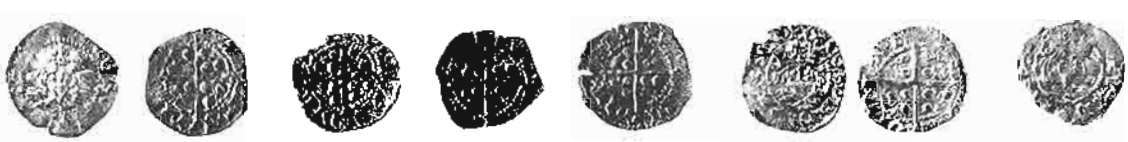
PLATE 4

220 obv. 220 rev. 224 rev. 225 obv. 226 rev. 230 rev. 232 rev.

233 obv. 234 rev. 241 rev. 242 rev. 248 rev. 249 rev. 250

255 rev. 258 obv. 263 obv. 266 rev. 281 rev. 282 obv.

286 obv. 286 rev. 292 rev. 293 obv. 297 rev. 300 obv. 300 rev. 303 rev.



307 obv. 308 rev. 310 rev. 312 rev. 313 rev. 316 obv. 316 rev. 320 obv.

327 rev. 328 rev. 333 rev. 334 obv. 339 obv. 343 rev. 344 obv. 345 obv.

348 obv. 349 rev. 351 obv. 351 rev. 352 obv. 352 rev. 353 obv. 353 rev.

354 obv. 355 obv. 356 obv. 356 rev. 357 obv. 357 rev. 358 obv. 358 rev.

THE MILLED COINAGE OF ELIZABETH I

D. G. BORDEN AND I. D. BROWN

Introduction

THIS paper describes a detailed study of the coins produced by Eloy Mestrelle's mill at the Tower of London between 1560 and 1571. We have used the information obtained from an examination of the coins to fill out the story of Eloy and his machinery that is given by the surviving documents.

There have been a number of previous studies of this coinage. Peter Sanders was one of the first to provide a listing of the silver coins[1] and more recently one of us (DGB) has published photographs of the principal types.[2] The meagre documentary evidence relating to this coinage has been chronicled by Ruding,[3] Symonds,[4] Craig,[5] Goldman[6] and most recently by Challis.[7] Hocking[8] and Challis have given accounts of what little it known of the machinery used.

This study first summarises the history of Mestrelle and his mill as found in the documents and then describes our die analysis based on an examination of enlarged photographs of 637 coins. We combine these two to propose a classification for the coinage in Appendix 2.

Mestrelle and the Milled Coinage of Elizabeth I

Queen Elizabeth I succeeded her sister Mary I as queen of England and Ireland in November 1558. On 31 December 1558 she signed a commission to Sir Edmund Peckham as high treasurer of the mint to produce gold and silver coins of the same denominations and standards as those of her sister, differing only in having her portrait and titles.[9] The coins struck over the next eighteen months mostly never saw circulation because the large amount of base silver coin in circulation drove all the good coin into private savings or, worse, into the melting pot. To rectify this situation plans were made for a recoinage which was duly announced on 27 September 1560 by a proclamation calling down the base coins to somewhat below their bullion value.[10] On 1 October 1560 the mint started issuing the new coin, of the same 11 oz (916) standard and the same denominations as the earlier coins but differentiated from them by the inclusion of a circle of dots between the bust and the legend.[11] The initial mark of a lis remained unchanged.

During the next two months as the recoinage got underway a number of important changes were made. The standard of the silver was restored to its ancient sterling value, 11 oz 2 dwt (925), and a second mint was established within the Tower to assist in recoining the silver. These changes were given effect by two indentures; the first, signed on 8 November 1560, appointed Thomas Stanley as undertreasurer of the 'Nether Mint' situated between the west walls of the Tower of London and charged him with making the full range of gold

[1] P. Sanders, 'The milled silver coins of Elizabeth', *NCirc* 47 (1949), 410–11.

[2] D. G. Borden, 'An introduction to the mill coinage of Elizabeth I of England', *Actes 8 Cong. Internat. Num. (New York-Washington) 1973* (Paris, 1976).

[3] R. Ruding, *Annals of the coinage of Britain* (London, 1817), II, 133–67.

[4] H. Symonds, 'The mint of Queen Elizabeth and those who worked there', *NC* 5th ser. 16 (1916), 61–105.

[5] J. Craig, *The Mint* (Cambridge, 1953).

[6] P. H. J. Goldman, 'Eloye Mestrelle and the introduction of the mill and screw press into English coining. circa 1561–75', *NCirc* 82 (1974), 422–7.

[7] C. E. Challis, *The Tudor Coinage* (Manchester, 1978).

[8] W. J. Hocking, 'The first coinage by machinery in England', *NC* 4th ser. 19 (1909), 72–82.

[9] Ruding, p. 133. The denominations ordered included the 30s. sovereign, 10s. angel and 5s. half-angel in fine gold, the 20s. pound (not issued), 10s. half-pound, 5s. crown and 2s.6d. half-crown in crown gold, and the shilling, half-shilling (not issued), groat, halfgroat and penny in 11 oz fine silver.

[10] Ruding, pp. 135–7.

[11] I. D. Brown, 'A new mintmark for Elizabeth I', *NCirc* 80 (1972), 59–60.

and silver coins,[12] the second, signed on 9 December 1560, appointed Thomas Fletewood as undertreasurer of the 'Upper Houses', a new mint built between the walls on the east side of the Tower, to produce only silver coins, viz. the shilling, groat, halfgroat and penny.[13] The Nether Mint went into production immediately, marking its coins with the initial mark cross crosslet, but it was not until January 1561 that the Upper Houses were striking coins in any quantity.[14] These bear the initial mark martlet.

It was against the background of the recoinage that Elizabeth authorised Eloy Mestrelle, 'the Frenchman', to set up the first coining press in England. Little is known of the antecedents of Eloy. He was born in Paris and probably moved to London with his family, including a kinsman Philip, early in 1559. He must have learned his trade at the Moulin de Monnais at Versailles and we can only speculate on why he left. The Moulin was in full production at the time, and it is unlikely that the queen invited him to England to undertake such an experiment at a time when her energies were being so fully engaged in the recoinage. It is likely therefore that Eloy was out of favour with his superiors and left France to see if he could sell his skills to the English court. This interpretation is suggested by the first mention of Eloy in the contemporary records, a pardon, granted on 24 March 1561 when he was already established at the mint, 'for all treasons, felonies and offences committed before 1 March 1. Eliz. (1559) in respect of clipping or counterfeiting coin'.[15]

Eloy presumably made contact with the court on his arrival in London for by June 1560 he was beginning to assemble the material needed for his machinery.[16] The costs for setting up his machinery were included in the accounts of the Upper Houses,[17] though his formal relationship with the undertreasurer Fletewood is not clear nor is much known about the staff he had working with him, apart from William Blunt[18] who is mentioned in a couple of documents as the official responsible for the 'press money'. Eloy himself was responsible for the production of his own dies which, as discussed below, were produced in a different manner from those used with the hammered coins.

Mestrelle and Blunt were responible for all aspects of the production of the new coins including maintaining the standards of weight and fineness. The new coins were therefore differentiated from Fletewood's hammered pieces by having no circle of dots between the queen's portrait and the legend and by having the initial mark star. They were treated separately at the pyx trials and appear to have met the required standards.[19]

The machinery used to produce the coins has been described by Symonds[20] and Challis.[21] The metal was cast into special ingots which were passed through a cutter that gave blanks about ten per cent overweight. The accuracy of this cutter was not great enough to produce blanks within the required tolerance and they were therefore laboriously passed through rollers several times and recut (annealing between times where necessary) until their weight was within the required limits. The design was then impressed with a balancier or screw press. Unlike the presses used in Paris, which were driven by water power, the relatively small rollers used for justifying the single blanks were probably turned by hand. The workshop was equipped with several such rollers[22] but probably a single balancier (see below). At periods of peak production Mestrelle's mint must have employed at least a dozen men.

Mestrelle's machinery started production sometime after the new standard was introduced on 8 November 1560, but probably before January 1561. The first coins he produced were the shilling, groat and halfgroat. During 1561 he also struck a small number of halfpound and crown coins in gold, possibly in conjunction with the queen's visit to the mint in July.[23] It is not clear whether these coins were authorised or merely patterns. The silver

[12] Symonds, p. 66.
[13] Ruding, p. 146.
[14] I. D. Brown, 'Some notes on the coinage of Elizabeth I with special reference to her hammered silver', *BNJ* 28 (1958), 568–603; Challis, p. 126.
[15] Goldman, p. 422.
[16] Challis, p. 17.
[17] Symonds, p. 70.
[18] Challis, p. 18.
[19] Symonds, pp. 97–100.
[20] Symonds, pp. 75–6.
[21] Challis, pp. 17–19.
[22] Challis, p. 17.
[23] Symonds, p. 67.

coins (but not the gold) were pyxed together with the hammered recoinage issues on 24 October 1561.[24] Following this pyx the old silver denominations were dropped in favour of the new denominations 6d, 3d, 1½d and ¾d. More than three quarters of Mestrelle's total output was in sixpences but he produced a significant number of threepences and a small number of experimental threefarthings pieces, as well as a small coinage of gold.[25] The new denominations were proclaimed on 15 November 1561,[26] and in December Eloy was awarded an annual pension of £25, not a large sum, but a mark of royal favour.[27]

The next eighteen months were the most productive of Mestrelle's career with the Tower mint. No records survive of the amount of silver struck but most of the surviving specimens come from this period. The number of mill sixpences struck with the dates 1561 and 1562 probably runs into the hundreds of thousands, and many of them were still in circulation over a century later.

During this period a coinage of gold halfpounds, and later crowns and halfcrowns was undertaken. Bishop Grindal of London refers to these coins in a letter written on 6 June 1562 in which he encloses a sample of the new gold coins made 'in a manner resembling print'.[28]

During the following summer, in 1563, the plague arrived in London.[29] Those who had retired to the country for the summer remained there while those still in the city either left or avoided public places. Trade languished and food was scarce. Michaelmas term was not kept and the mint remained closed until the following spring. When it reopened Eloy's workshop resumed production of sixpences and threepences but silver came into the mint slowly and production was slow both for the press and the hammer.

It is perhaps at this time, when work was scarce, that the frictions that apparently plagued the latter days of the mill experiment started. Sometime during 1564 Eloy's machinery came to a stop even though the hammermen continued to produce a respectable quantity of coin. Indeed, hammered coin production picked up considerably during 1565 and 1566, but it was not until the end of 1566 that Eloy once again got back into production. On the 13 February 1567 a long overdue pyx was held[30] and although the press money is not explicitly mentioned it must have been included since the next coins issued by Mestrelle have a new initial mark – the lis.

Mestrelle continued to produce his modest share of the increasing output of the mint until 1 September 1568 when his fortunes dramatically changed. On that day Philip Mestrelle was arrested for producing four counterfeit Burgundian crowns and Eloy was implicated in the crime.[31] At the City of London magistrates session of 12 January 1569 Philip was convicted and on the seventeenth he was hanged at Tyburn.

Eloy's involvement appears to have been minor since he sued for a pardon which was granted on 2 May 1569,[32] but it took him a year to recover his position in the mint. When he renewed his activities in the latter part of 1570 the coins he produced showed that he was working under considerable restrictions. The only set of letter punches available to him had a retrograde N making his designs look ridiculous. The engraving of the bust was also inferior. A little medallion (No. 53)[33] struck by Mestrelle at this time in gold and silver is probably a poignant plea to the queen. Usually called the 'Defence of the Realm Medal',[34] its obverse has the portrait of the queen with the flattering message QUID NOS SINE TE

[24] Symonds, p. 99.

[25] There are no records of how much silver or gold Mestrelle struck, nor are the pyx records helpful. Small numbers of milled sixpences continue to appear in hoards deposited as late as 1697 indicating that appreciable amounts of silver were struck. Apart from the half pounds of 1567 only token quantities of gold appear to have been struck.

[26] Ruding, p. 152.

[27] Goldman, p. 422.

[28] Hocking, p. 73.

[29] Ruding, p. 158.

[30] Symonds, p. 100.

[31] Ruding, p. 159; Goldman, p. 423.

[32] Goldman, p. 423.

[33] Numbers in parentheses refer to the type numbers listed in Appendix 2 and illustrated in the figures.

[34] Hawkins, Franks and Grueber, *Medallic Illustrations of the History of Great Britain and Ireland* (London, 1904–11), no. 57 (p. 120). There dated to 1572 but this piece is clearly a product of Mestrelle's workshop from 1570.

(what are we without Thee?) and the reverse a picture of the Tower with the plea QUID HOC SINE ARMIS (what is this without tools?). From the sad quality of this little piece it is clear that Mestrelle had been denied the tools he needed.

In December 1571 undertreasurer Stanley died[35] and on 19 April 1572 a new indenture was signed with John Lonison as master, reinstating the old mint organisation in which the master and warden were fully responsible for the running of the mint including finding the salaries of the staff from their seigniorage.[36]

Martin had no desire to see his profit used to support inefficient experiments and, to justify discontinuing Mestrelle's press, he ordered the assay-master to run a series of trials in May and June to assess the efficiency of the machinery.[37] The tests showed that two men using Mestrelle's equipment could produce twenty-two sixpence blanks an hour compared to the hammermen's capacity to produce 280 blanks in the same time. Furthermore the hammermen could size their blanks more accurately and with less waste. Martin deprived Mestrelle of access to the mint. In a letter written on 25 August 1572 to Lord Treasurer Burghley, Martin lists a variety of problems with Mestrelle ranging from non-payment of debts to difficulties with sightseers. In any case Martin regarded Mestrelle's conviction as voiding his patent.[38]

Although Eloy retained his lodgings in the Tower, he never struck any more coins there. For the next five years nothing is known of his movements, but in October 1577 he was arrested in London and charged at the Norfolk Assizes with counterfeiting.[39] On his apprehension his goods were seized, his house was shut up and his widowed mother and family turned out to fend for themselves. Later, when the evidence against him appeared sufficient to ensure a conviction, he attempted to save his life by turning queen's evidence and implicating a number of others who were also involved in counterfeiting. But his revelations did not satisfy the Crown, and in the spring of 1578 Eloy appears to have met the same fate as his kinsman Philip.

Eloy's machinery remained in the Tower, and in 1574 and 1575 a series of very handsome sixpenny and threepenny patterns (50–52) was struck. Little is known about the origin of these pieces. In style they are similar to some of the fine early mill pieces but the bust is much more flamboyant. It is difficult to believe that they were produced by Eloy who was out of favour and would not have had access to the die shop or his machinery. The portrait is similar to that used at this time on the semi-official Wickliffe and Humphrey pattern billon halfpenny.[40] It is likely that Derek Anthony was responsible for both sets of dies and decided to test the abilities of the machinery that was now lying idle.

Mestrelle's coins have survived both him and his machinery. They were accepted into circulation where they continued to provide service for 130 years until the recoinage of 1696-97. However, because of their round shape and different style they did stand out and were often retained for special purposes. Shakespeare refers to them being kept as gaming counters in which capacity they seem to have commanded a premium.[41] A series of forty-five mill sixpences culled from circulation and gilded was recently sold at an auction together with its mid-eighteenth century silver gilt container.[42] The two milled sixpences appearing in the Painswick Hoard[43] deposited in 1642 during the Civil War constitute a pair of matched love tokens, two coins bent together in the shape of an S and one retained by each of the parties. Perhaps the most unusual fate to befall any of these coins was

[35] Challis, p. 134.

[36] Challis, pp. 134–5.

[37] Symonds, pp. 75–6.

[38] Symonds, pp. 73–4.

[39] The various documents relating to Eloy's trial are quoted by Goldman, pp. 425–6.

[40] C. W. Peck, *English Copper, Tin and Bronze Coins in the British Museum 1558–1958*, second edition (London, 1964), Coin no. 1, illustr. Pl. I.

[41] See the opening of *The Merry Wives of Windsor* discussed by Evans in *NC* 4th ser. 5 (1905), 307.

[42] Spinks Coin Auction No. 27 (16 March 1983), Lot 201.

[43] Reported in the *BNJ* 27 (1952/4), 219. (Brown and Dolley EP33). The coins are in the Gloucester Museum. The silver portion of this hoard appears to be a collection of keepsakes rather than a bag of currency.

experienced by the thirty mill sixpences (presumably kept as counters) that found their way to the Indian Northwest Frontier in the possession of an Englishman who was murdered there during the sixteenth century.[44]

The Coins

For the purpose of this study we acquired photographs of as many of the coins of the series as possible. These were printed at double scale and provided the principal source material.[45] In total we studied 637 coins representing 104 obverse and 96 reverse dies as listed in Appendices 1, 2 and 3. The relatively large number of dies represented by only a single coin suggests that about twelve obverse and eight reverse dies are not represented in our sample and still have to be identified.

Although no indentures of this coinage survive and the pyx records are meagre, the silver coinage can be divded into four separate accounting periods, the first (initial mark star) belonging to the first[46] issue of the reign (1560 to 24 October 1561), the remainder (initial marks star (24 October 1561 to 13 February 1567), lis (14 February 1567 to 13 February 1571) and castle (14 February 1571 to December 1571)) belonging to the second issue. The gold all belongs to the first gold issue and falls into two accounting periods, star (1561–13 February 1567) and lis (14 February 1567–13 February 1571). Within each period there are well defined varieties, each of which may be represented by as many as a dozen dies.

The method of making the dies is not described in the contemporary documents but an examination of the coins shows that it was different from the method used in sinking dies for the hammered coins. Punches were used to produce the designs but the dies were extensively re-engraved afterwards. Thus the same bust punch can be followed through several dies but on each the details of the clothing, jewellery and hair is slightly different.

An analysis of the die pairings shows that apart from a brief period in the early summer of 1562 only one pair of sixpence dies was in use at a time. This suggests that for most of the period the mint had only one operating balancier. Frequently both dies were changed together but in at least one case a reverse die was used with six different obverse dies, and in another case an obverse was used with four different reverse dies. The slight excess in the number of obverse (104) over reverse dies (96) is an unusual feature of this coinage. The relatively short lifetime of the punches is also remarkable, the longest surviving bust punch produced only forty-one dies and at least six bust punches were used on the milled sixpennies during the nine years in which they were issued. For comparison a bust punch used on the hammered coinage might last from ten to fifteen years and produce many hundreds of dies. The production of dies, like the production of the coins, must have been a labour of love; its cost could only be justified by the superior appearance of the coins.

We have grouped the coins into fifty-three types according to the denomination, initial mark, date, bust and major stylistic variations. Different dies within a type are indicated by the notations O1, O2 and R1, R2 for the obverse and reverse respectively. The types have been arranged chronologically and as far as it is possible to tell so have the dies. However, the die sequences are broken and it is not usually possible to say which end of a sequence was chronologically first. A description of the various features of the coins follows. A description of the types and dies is given in Appendix 2 and an historical summary in Appendix 4. Every die in the sample is illustrated in the plates. Appendix 3 lists the die combinations and the provenances of the coins studied.

[44] *Gentleman's Magazine* (1865), I, 595. (Brown and Dolley KR1).

[45] The photographs used as source material have been deposited with the Department of Coins and Medals at the British Museum.

[46] According to the classification proposed in I. D. Brown, 'A Classification of the Coins of Elizabeth I', *NCirc* 92 (1984), 116–18.

The Busts

Eight different busts can be identified. Although the details may vary from one die to another the general features are common to all dies. When a change is made from one bust to another, it is deliberate and occurs at the same time in all denominations, providing a useful method of dating the gold coins relative to the silver.

Bust A 1560–1561

A small-faced bust with an ornate dress having two rows of beads or pearls at the bottom of the dress and sleeve. The collar has three or four rows of diamonds in its design. A high ruff conceals the ear. The bust undergoes an evolution during the year and, particularly on the small shillings, one of the rows of beads at the bottom may be missing. On the sixpences the two rows of beads are arched and reveal a flower pattern below.
Types: Half-pound (1), Crown (7), Shillings (12–17), Sixpence (21), Groat (18), Threepence (44), Halfgroats (19, 20).

Bust B 1561–1562

A small bust with a very plain dress. There is considerable variation in the width of the bust, the size of the sleeves, etc.
Types: Sixpences (22, 23).

Bust C 1562

A tall or upright bust with an ornate dress. Very neat with a richly decorated dress having a high ruff and a single row of pearls about the face. There is a single row of beads at the bottom of the bust with a flower pattern below.
Types: Half-pound (2), Sixpence (24), Threepence (45).

Bust D 1562–1564

A large, broad bust with an elaborate dress. The shoulders are plain or almost plain except for vertical rows of beads. There are no pearls on the bonnet and a high ruff conceals the ear.
Types: Half-pounds (3–5), Crown (8), Half-crown (10), Sixpences (25–34), Threepences (46–8), Threefarthings (49).

Bust E 1564–1566

Similar to D but with a low ruff which exposes the ear. The two versions used on the sixpence in 1566 have distinctive treatments of the clothing.
Types: Half-pound (6), Crown (9), Half-crown (11), Sixpences (35, 36).

Bust F 1567–1568

A small plain bust with a low ruff and exposed ear. The shoulders are shown more in profile.
Types: Sixpences (37–40).

Bust G 1570–1571

A large crude bust which breaks the legend. Always accompanied by retrograde N's in the legends.
Types: Sixpences (41–3), 'Defence of the Realm' medal (53).

Legends

The normal obverse legend is ELIZABETH·D·G·ANG·FRA·ET·HIB·REGINA. There are some accidental variations on some dies as noted in Appendix 2. On the 1567 sixpences, two major variations in the legend are found: ELIZABETH·D: G: ANG: FRA: ET·H: REGI' (37)

and ELIZABETH·D: G: ANG: FR: ET·HI: REGIN: (38) later expanded to REGINA' (39, 40). The reading REG was apparently reported by Sanders in error.[47]

The 1570–1 sixpences have as an obverse legend ELIZABETH·D·G·/AN·F·& ·HI·REGINA with retrograde N's and the bust breaking the legend at the slash.

The 1563 threefarthings pieces have the obverse legend, E·D·G·ROSA SINE SPINA.

The reverse legend on the gold reads SCVTVM·FIDEI·PROTEGET·EAM. (The shield of faith shall protect her.) The reverse of most of the silver coins reads, POSVI/DEVM·AD/IVTORE/M·MEVM. (I have made God my helper), with the cross breaking the legend as incidated. On the 1567–71 sixpences, the reverse legend reads, POSVI/DEV'.AD/IVTORE/MEV'. The reverse of the mill threefarthings pieces reads, CIVI/TAS/LON/DON/.

The Borders – Dogtooth and Pellet

One of Mestrelle's innovations was a twin punch used to produce the beads (pellets or teeth) in the circle which forms the border around the outside of the coins.[48] The first blow with this punch made two circular or oval pits in the die. The punch was then moved until the boss of the first was in the second pit. A second blow sunk a third pit, and so on round the circle which had previously been traced with a compass.

In most cases, the 'teeth' are actually elongated ovals but where there is a raised or flat rim they appear more like triangles or 'teeth' with their points inward. There were a number of variations in the borders during the brief eleven years of the coinage. One of the first sixpences (21) had 164 very closely spaced long, thin 'teeth' but subsequent dies had only 120–40. Late in the 1562 sixpence series, fine 'teeth' were again used (30) with the introduction of the pattée cross. Still later, a very fine pellet border was used (31–3) with 200–10 very tiny beads. This was also used for the 1563 and early 1564 sixpences. With some of the 1564 sixpences (34), and some of the 1566 sixpences (36), a flat rim was introduced together with rather coarse 'dogtooth' denticles which appear as teeth pointing inward (120 'teeth'). The borders of the 1567–8 sixpences comprise about 120 large 'dogteeth' but on one die (37–R3) they have a distinctly braided look. However, one of the 1568 dies (40–R2) does have a fine-toothed border. The pattern sixpence of 1570 (41) has an interesting border consisting of elongated 'teeth' alternating with double stops or colons. On the regular 1570 and 1571 sixpences (41, 43) the coarse-toothed border was used.

Edges

There is no evidence that the coins were struck in collars. The edges are for the most part plain but the gold coins with the mark lis have serrated edges which Hocking supposes were put on the blank by some kind of knurling tool before the coin was struck.[49]

Roses

The roses were placed behind the queen's head on the sixpences, threepences and threefarthings in 1561 to distinguish them from the groats, half-groats and pennies of the previous coinage. The rose appears with various sizes and orientations which can be used in differentiating different dies.

Shields

The shields used on the reverses of the mill coins are generally much larger than those on the hammered coins. Their size, shape and positions are useful in die identification. Attention should be paid to the position of the upper corners of the shields with reference to the legends. As the flans of the shillings shrank from 32 to 29 mm the shields appear to be

[47] Sanders, pp. 410–11. [48] Craig, p. 124. [49] Hocking, pp. 79–80.

larger and they crowd the legend. Some shields are more square, some more elongated and some are more rounded.

Crosses

All the silver mill coins bear a large cross and shield on the reverse. Until late in the 1562 coinage, a fourchée cross was used with floriate or leafy terminations in each of the forks. From then until 1566 a pattée cross was used, after which the fourchée cross was again used. A simple flat cross was used on the patterns of 1574–75.

Crowns

All the portraits on the mill coins show the queen's head crowned. The crowns vary considerably, having 5–13 pearls or beads on either side of the orb atop the crown. The bands of the crowns vary with different stops or lozenges in the designs. The position of the cross on the orb relative to the legend is a useful way to distinguish different dies. All the gold pieces have a large crown on the reverse with ER at the sides. These crowns vary, especially in the width of the opening.

Some of the crowns are 'frosted', a process which produces a beautiful matt surface in the background. Frosted crowns are found on dies 1–R1, 3–O1, 4–R1 in the half-pounds, 7–R1 in the crowns, and 25–O4, 25–O5, 25–O8 and 29–O4 and possibly others in the sixpences. Hatching, or fine diagonal lines, appears within a few crowns such as 5–R1 and 6–R1.

Letters

As the mill coinage proceeded, the letter z changed from a plain z with straight bars to one with slightly wavy bars and finally to a very curly z with an upswept lower bar.

The letter N is retrograde in the AN and REGINA of the obverses used in 1570–1 and in both the obverse and reverse dies of the 'Defence of the Realm' medals (53). The spacings of the letters in the legends and variations in the punches used for the letters and numbers are useful for differentiating dies. Variations in punctuation are also known.

Die Flaws

A number of the dies developed cracks or other flaws during striking which can be a useful method of identification. These are listed in Appendix 2 and are visible in many of the illustrations.

APPENDIX 1

Statistics on Numbers of Dies found in the Present Study

Denomination	*Obverse Dies*	*Reverse Dies*	*Die Pairs*	*Coins*
Half-pounds	6	4	6	44
Crowns	3	3	3	11
Half-crowns	2	2	2	5
Shillings	10	10	11	89
Sixpences	66	61	94	381
Groats	2	2	2	21
Threepences	5	6	7	48
Half-groats	3	3	3	24
Threefarthings	3	1	3	3
Late patterns, medals	4	4	4	11
Totals	104	96	135	637

APPENDIX 2

Descriptions of the Principal Types and Dies

Type

1 Half-pound star, Bust A. From its style this piece was struck during the recoinage, possibly on the occasion of the queen's visit in July 1561. Only one example is known and as no milled gold was included in the pyx of October 1561 it is possible that this coin was a pattern. The obverse die is the same as 16–O3.

2 Half-pound, star, Bust C. Issued before June 1562. Obverse legend reads FR instead of FRA. This is probably the piece referred to in Bishop Grindal's letter.

3 Half-pound, star, Bust D, tooth border. Struck in 1562.

4 Half-pound, star, Bust D, pellet border plain Z. Struck in 1563.

5 Half-pound, star, Bust D, pellet border curly Z. Struck in 1564.

6 Half-pound, lis, Bust E, serrated edge. Struck in 1567–8. These are the most common of the milled gold coins.

7 Crown, star, Bust A. Struck during 1561. Although several examples are known this piece may have been a pattern (see type 1). Obverse die same as groat (18–O1).

8 Crown, star, Bust D, pellet border, curly Z. Struck in 1564.

9 Crown, lis, Bust E. Struck in 1567–68. Reverse reads FIDI:EI.

10 Half-crown, star, Bust D, pellet border, curly Z. Struck in 1564.

11 Half-crown, lis, Bust E. Struck in 1567–8.

12 Shilling, martlet. This is a specimen hammered coin struck by Fletewood's mint in early 1561 (Brown, 'Some notes', p. 574). Its similarity with the contemporaneous type 13 suggests some connection, possibly an attempt by the hammered moneyers to show that they could produce as handsome a coin as the pressmen.

13 Shilling, mullet. Struck probably in December 1560 or January 1561 as a pattern for the milled coinage. The mullet initial mark was used to denote patterns.

14 Shilling, star, Bust A with plain dress, large size (32 mm diameter). Probably the first currency issue.
- O1
- O2
- R1 large shield.
- R2 smaller shield.

15 Shilling, star, Bust A with decorated dress, large size (32 mm diameter).
- O1 cross points to centre of L.
- O2 cross points to right of L.
- R1 shield points to left side of O.
- R2 shield points to right side of O.

16 Shilling, star, Bust A, intermediate size (30 mm diameter).
- O1 cross to right side of E, star closer to E.
- O2 cross to right side of E, star closer to A.
- O3 cross points to L. Also used on halfpound (see type 1).
- R1 shield to left of E.
- R2 shield to right of E.
- R3 shield to centre of E.

17 Shilling, star, Bust A, small size (29 mm diameter). Although represented by a single die pair this is the most common shilling variety.

18 Groat, star, Bust A. Die O1 also used on Crown (see type 7).
- O1 5 jewels on each side of crown, broken B in HIB.
- O2 8 jewels on each side of crown.
- R1 space between M and fleur on cross.
- R2 M crowds fleur.

19 Half-groat, star, Bust A. Two rows of beads at base of bust.

20 Half-groat, star, Bust A. Single row of beads at base of bust.
- O1 cross touches E.
- O2 cross clear of E.
- R1 top of T weak.
- R2 inverted A for V in MEVM.

21 Sixpence, star, 1561, Bust A. With arched double row of beads at base of bust.
- O1 space between rose and crown.
- O2 rose almost touches crown. No stop after D.
- R1 shield to right of O.
- R2 shield to left of O.

22 Sixpence, star, 1561, Bust B, large rose.

23 Sixpence, star, 1562, Bust B, medium rose.

O1 die break through HIB, thorn points to T, cross to L.
O2 thorn points to left side of H.
O3 thorn points between T and H.
O4 die break through H of name, thorn points to E.
O5 ELIZABTH, thorn points between B and E.
O6 thorn points between T and H.
O7 thorn points to T, cross to E.
R1 misshapen M in ADIVTOREM.
R2 die flaws at 8 and 11 o'clock.
R3
R4 small shield, stops at date almost at edge of shield.
R5 shield between P and O.
R6 star touches fleur of cross.
R7 small 5, no stops at date.
R8

24 Sixpence, star, 1562, Bust C, medium rose. Note that each die has different decoration on the bust.

O1 cross points to E.
O2
O3
O4
R1 no stops at date, reads DEVMA.D.
R2 A and D overlap.
R3 space between I of POSVI and fleur.
R4 6 of date lower than 2.
R5 no stops at date.
R6 stop at date close to P.
R7 stop after date close to corner of shield.

25 Sixpence, star, 1562, Bust D, small rose. Right shoulder of bust penetrates legend between FRA and ET. The crown is usually frosted.

On the normal obverse the cross points to the centre of the L and a thorn to the middle of the H. Obverse dies can be differentiated by the position of the point of the right sleeve relative to the stop after FRA. Reverse dies can be differentiated by the shape and position of the date.

O1
O2 die flaw through R of REGINA, thorn points between T and H.
O3 cross points to left side of L. Star points between teeth, bust to left of stop.
O4 cross points to right of short L. Star points at tooth.
O5
O6 small rose, petal points to H.
O7
O8 cross points to right side of E.
O9 cross points between E and L, thorn points between T and H.
O10
O11 cross points to left side of L. Star points at tooth, bust to right side of stop.
R1
R2 period after date close to right of P.
R3
R4 base of shield not tapered.
R5 bottom of 5 curls to left.
R6
R7 spaces after IVTORE and MEVM.
R8
R9 large space after I of POSVI.

26 Sixpence, star, 1562, Bust D. Cross on crown penetrates legend between E and L. Right shoulder of bust does not penetrate legend and the star is closer to A than E.

Dies of this type are extremely hard to differentiate. The number and arrangement of beads on the crown arches and the position of the stop relative to the bars of the H's are the best way to distinguish obverse dies. There are small variations in the dress ornamentation.

O1
O2 2 beads on each inner arch of crown.

Appendix 2. Descriptions of the Prinicpal Types and Dies (cont.)

O3
O4 2 beads on each inner arch of crown.
O5 die flaw through REGINA.
O6 2 beads missing on front arch of crown.
O7 single bead on forward inner arch of crown.
O8 single bead on forward inner arch of crown.
O9 die flaw through star, 2 beads on forward inner arch of crown.
O10 single bead on both inner arches of crown.
R1 flaw through SVI and IVT.
R2
R3
R4
R5 I of POSVI parallel to right limb of V.
R6

27 Sixpence, star, 1562, Bust D. Neither cross nor right shoulder penetrate legend. Z is broad and slightly curly. Fourchée cross on reverse.
O1 cross points to centre of E.
O2 cross points to right side of E, reads A.GERA.
O3 cross points to upright of E.
R1 stop directly below V.
R2 stop slightly to right of V.

28 Sixpence, star, 1562, Bust D. As type 27 but with pattée cross on reverse.

29 Sixpence, star, 1562, Bust D. As type 28 but with curly Z.
O1 cross points between E and L.
O2 crown points to E.
O3 die flaw over ELI, top bar of Z slopes to left.
O4 crown covered by L.
R1 shield points to right of E.
R2 shield points to left of E.

30 Sixpence, star, 1562, Bust D. As type 29 but with border of fine teeth.
O1 bust fully pierces legend after FRA, star touches fourth bead on crown.
O2 star touches fifth bead on crown.
O3 E higher than T in ET.
R1 2 fleur-de-lis in fourth-quarter touch cross. V and M of DEVM elided.
R2 space between cross and fleur de lis in fourth-quarter.

31 Sixpence, star, 1562, Bust D. As type 29 but with border of pellets.

32 Sixpence, star, 1563, Bust D. As type 31 apart from date.
O1 stop after FRA above cross bar of A.
O2 stop after FRA below cross bar of A.
R1

33 Sixpence, star, 1564, Bust D. As type 31 apart from date. Date overstamped on 1562 or 1563.
O1 right arm truncation opposite stop.
O2 right arm truncation opposite A.
R1 1564/3 stop after date closer to shield, same as 32-R1 overstamped.
R2 1564/3 (?) stop after date closer to P.

34 Sixpence, star, 1564, Bust D. Toothed border. Date overstamped on 1562 or 1563.
O1 lower left point of star points to bottom of A.
O2 die flaw at FRA, lower left point of star points to middle of A.
R1 1564/3. Space after I of POSVI.
R2 1564/2.

35 Sixpence, star, 1564, Bust E. Toothed border with rim. Date overstamped over 1562 (?).

(35A) The sixpence with date 1565 has been reported in the Ashmolean Museum but this piece belongs to type 36.

36 Sixpence, star, 1566, Bust E. The two obverse dies have quite different treatment of clothing. 6 of date overstamped over an indecipherable figure.
O1
O2
R1 shield points to centre of E.
R2 shield points to left of E.

37 Sixpence, lis, 1567, Bust F.
Reads ELIZABETH.D'G:ANG:FRA:ET.HI:REGI'. The reverses from here on read POSVI/

DEV'.AD/IVTORE/M.MEV'. The reverse dies are best differentiated by the relative positions of the 6 and 7.

O1 front of bust points to G, I of REGI at angle to G.
O2 front of bust points to F.
O3 front of bust points to G, I of REGI parallel and close to G.
O4 no punctuation after REGI.
R1
R2 fault on left stroke of M in ADVTOREM.
R3 6 higher than 7 in date.
R4
R5

(37A) The REG sixpence was reported by Sanders in error and does not exist.

38 Sixpence, lis, 1567, Bust F.
Reads ELIZABETH.D:G:ANG:FR:ET.HI:REGIN: The bust is smaller and the shield larger.
O1 front of bust points to G.
O2 front of bust points to punctuation mark.
R1 stop after date to right of P.
R2 stop after date to left of P.

39 Sixpence, lis, 1567, Bust F.
Reads ELIZABETH.D:G:ANG:FRA:ET.HI:REGINA from here on.
O1 thorn on rose points to T.
O2 thorn on rose points to E.
R1 lis in shield points to right of 5.
R2 lis in shield points to left of 5.

40 Sixpence, lis, 1568, Bust F.
O1 legend almost touches cross of crown.
R1 = 39–R2 with 8 over 7 of date.
R2 lis in shield points to right of 5.

41 Pattern sixpence, mullet, 1570, Bust G. Border of alternating teeth and colons. Retrograde N.
Reads ELIZABETH·D·G·/AN·F·&·HI.REGINA from here on.

42 Sixpence, lis, 1570. Bust G. Retrograde N.

43 Sixpence, castle/lis, Bust G, 1570/1. Same dies as 42 but overmarked.

44 Threepence, star, 1561, Bust A.

45 Threepence, star, 1562, Bust C.
O1 beads around left shoulder continuous.
O2 diamond pierces row of beads around left shoulder.
R1 E and V of MEVM touching.
R2 E and V of MEVM properly spaced.

46 Threepence, star, 1562, Bust D. Forchée cross on reverse, small rose.

47 Threepence, star, 1562, bust D. Pattée cross on reverse.
Border of fine teeth.

48 Threepence, star, 1564/3, same dies as type 47.

49 Threefarthings, star, 1563, Bust D. Probably a trial coinage to test the feasibility of producing very small coins. Only three specimens known, one of which bears a mullet mark on reverse.
O1 front of bust points between I and N.
O2 front of bust points to I, space between R and O of ROSA.
O3 front of bust points to I.
R1
R1a star recut.
R1b large mullet stamped over star.

50 Pattern sixpence, mullet, 1574. Ruff curves around chin.

51 Pattern sixpence, mullet, 1575. Ruff does not curve around chin.

(51A) Pattern threepiece, mullet, 1574. Although illustrated in Ruding this piece probably does not exist.

52 Pattern threepence, mullet, 1575.

53 'Defence of the Realm' medal. Bust G. (*Æ* weight 3.8 g).

APPENDIX 3

Die Combinations and Provenances of Coins Studied

Die linked series are indicated by a line in the left hand magin

Key to Collection Referred to in Appendix 3 and in the Plates

Individual coins are numbered arbitrarily unless otherwise indicated.

A *Ashmolean Museum* (Heberden Coin Room), Oxford.
B *British Museum*, London.
C *Coats Collection* (Hunterian Museum) Glasgow. Ticket number given.
D *D. G. Borden Collection* (USA).
E *SCMB*. Year/coin number given.
F *Fitzwilliam Museum*, Cambridge. Photographs reproduced by permission of the Syndics of the Fitzwilliam Museum.
G *Glendining Sales*, London. Date/lot number given.
H *Hunterian Cabinet*, Glasgow. Ticket number given.
L *Lockett* Sales Pts IV and VII 1956–8. Given by lot numbers. Letters used to differentiate specimens from multi-coin lots given on photographs in BNS library.
M *C. Comber Collection* (UK).
N *Linda Fenton Collection* (USA).
P *NCirc* Year/coin number. Some photographs supplied by P. Finn.
PA *Spink's Auction Catalogue*, 31 (1983). Lot numbers given.
S *Sanders Collection* (UK).
U *Burstal Sale*, Glendining, London, 1968. Lot numbers given.
W *I. D. Brown Collection* (Canada).
Z *W. Castenholz Collection* (USA).

Obv. Die	*Rev. Die*	*Date*	*IM*	*Provenance*	*Remarks*
Half-pound					
1-O1	1-R1		Star	L2038	
2-O1	1-R		Star	A44, A45, B1, E60/G797, F1, F70, L3206, N1, S21	'FR' on obverse
3-O1	1-R1		Star	A2, B2, E77/A1711, E81/EG52, L4396, P73/149, P74/198, S23	
4-O1	4-R1		Star	B3	
5-O1	5-R1		Star	B4, P68/8693, S24	Small crown, pellets
6-O1	6-R1		Lis	A1, A46, A47, B5, E56/G1036, E70/G647A, E72/G176, E73/G2126, E79/A1246, E82/EG22, E82/EG75, E83/EG11, F2, F71, F72, L2039, P67/8182, P69/6267, P71/4178, P72/11572, P83/4673, PA153, S22	Coarse teeth (knurled edge)
Crown					
7-O1	7-R1		Star	B6, F3, L2040, N2, P72/5243	
8-O1	8-R1		Star	B7	Pellet border
9-O1	9-R1		Lis	B8, F3, L3307, P72/11573, PA154	FIDIEI on reverse
Half-crown					
10-O1	10-R1		Star	B9, L3308	Pellet border
11-O1	11-R1		Lis	B10, L2041 = PA155, S25	
Shilling					
12-O1	12-R1		Martlet	A48, B84, B85, M1, S7, L2044	Hammered Fletewood pattern
13-O1	13-R1		Mullet	B30, S6	
14-O1	14-R1		Star	B12, M2, S20	Large flan
14-O2	14-R2		Star	M3	
15-O1	15-R1		Star	A6, D26, M60, S13	Large flan

15–O2	15–R2		Star	A49, B11, C1094, F5, F19, H1, L2045, M4, N3, P69/2165, P70/395, PA168, S11, U205	
16–O1	16–R2		Star	D13, E68/X128, S18	Intermediate flan
16–O1	16–R2		Star	M5, P81/5406, P80/2954, S14, S16	
16–O2	16–R2		Star	A4, A3, H2, M61, PA169, PA170, S17	Very fine teeth
16–O3	16–R3		Star	A5, A50, B13, B15, C1095, D21, E74/2058, E76/E56, E76/E205, F15, H2, M6, P79/2819, P81/5405, S12, S15, U206	
17–O1	17–R1		Star	A51, A52, A53, B14, D14, E78/E128, E78/E461, E83/E405, F4, F14, F16, F17, F18, F20, F21, F22, H1, L2046, M7, P70/396, P72/9296, P79/10248, P81/5407, P82/1685, S19, U207	Small flan
Groat					
18–O1	18–R1		Star	A34, A54, B16, B17, B18, C1122, D15, E72/H2439, E78/E131, F10, F66, F67, F68, H14, L2053, M8, N6, P79/10262, PA176, S120, U217	
18–O2	18–R2		Star	M9	
Half-groat					
19–O1	19–R1		Star	A43, M10, P79/10264, S130	
20–O1	20–R1		Star	A55, A56, A57, B25, M11, N8, P82/7405, S129	
20–O2	20–R2		Star	B26, B27, D18, E66/H3329, F13, F69, H16, L2058, M12, P70/403, PA178, S128	
Sixpences					
21–O1	21–R1	1561	Star	A7, B32, D27, F6, M13, P70/11297, S9	
21–O2	21–R2	1561	Star	B33, B38, C1107, D1, D34, E76/E57, F23, F24, F25, F26, H3, L2049a, M14, M15, M16, S8, Z1	
22–O1	22–R2	1561	Star	B39, L2049b, S5	
23–O1	23–R1	1562	Star	A9, B34, F46, M17, R1, S1	
23–O2	23–R1	1562	Star	A33, B40, B41, C1109, D2, F47, S34	
23–O2	23–R2	1562	Star	F40, F43, H5, M18, P70/11301, S37	
23–O3	23–R3	1562	Star	S10	
23–O4	23–R4	1562	Star	A10, B37, B43, D28, F37, F41, F45, M19, P70/11299, S31, S32	
23–O5	23–R5	1562	Star	B36, C1111, M72, P70/11298, S2	
23–O6	23–R5	1562	Star	B35, B42, S35	
23–O6	23–R6	1562	Star	A14, E82/E322, M20, S4, S3	
23–O6	23–R7	1562	Star	M22, P70/11300, S36	
23–O7	23–R8	1562	Star	L2049c, M21, S33	
24–O2	24–R1	1562	Star	A11, A22, B75, D4, F7, F42, F44, M25, P70/11305, PA173, S40	
24–O1	24–R2	1562	Star	A8, B78, D33, M26, P70/11304, S39	
24–O1	24–R3	1562	Star	B77	
24–O2	24–R3	1562	Star	S41	
24–O2	24–R4	1562	Star	B51	
24–O2	24–R2	1562	Star	D33	

Appendix 3. Die Combinations and Provenances of Coins Studied (cont.)

The following two die link sequences run in parallel.

24-O3	24-R5	1562	Star	M23, S38	
24-O3	24-R6	1562	Star	A19, B76, B80, B81, B82, D3, F38, F39, F48, F49, L2049d, M24, P70/11306, P79/2826, P82/4081, S42	
25-O1	24-R6	1562	Star	M64	
25-O1	25-R1	1562	Star	D23	
25-O1	25-R2	1562	Star	S45	
25-O2	25-R1	1562	Star	F30, M27, S30	
25-O2	25-R2	1562	Star	S62	
25-O3	25-R1	1562	Star	S49	
25-O4	25-R2	1562	Star	S46	
24-O4	24-R7	1562	Star	M62, N4, S43	
25-O5	24-R7	1562	Star	M63, S44	
25-O5	25-R3	1562	Star	M28, S47	
25-O6	25-R3	1562	Star	B47, B50, F36, S52	
25-O6	25-R4	1562	Star	C1108	
25-O7	25-R4	1562	Star	F27, F28, S50	
25-O8	25-R4	1562	Star	M30, S74	
25-O8	25-R5	1562	Star	S72	
25-O9	25-R6	1562	Star	B48, D5, F35, S70	
25-O10	25-R7	1562	Star	S51, S71	
25-O10	25-R8	1562	Star	B49, S53	
25-O11	25-R9	1562	Star	A21, B44, M29, P70/11303, S48, S54	
26-O1	26-R1	1562	Star	B45, C1110, D6, F33, M69, S29, S58	
26-O2	26-R1	1562	Star	F31, S60, S75	
26-O3	26-R2	1562	Star	S67	
26-O4	26-R2	1562	Star	B51, L2049e, P70/11307, S61, S77	
26-O5	26-R2	1562	Star	D24, M67, S26, S78	
26-O6	26-R2	1562	Star	M70, S73	
26-O7	26-R2	1562	Star	A18	
26-O7	26-R3	1562	Star	A15, A16, A20, F29, M68, S29, S76	
26-O7	26-R4	1562	Star	B45, S66	
26-O8	26-R2	1562	Star	M31	
26-O8	26-R3	1562	Star	A12	
26-O8	26-R4	1562	Star	A17, B52, B79, F32, P70/11302, P70/11308, S63, S65, S69	
26-O8	26-R5	1562	Star	H4, S64	
26-O9	26-R6	1562	Star	S68	
26-O10	26-R6	1562	Star	S59	
27-O1	27-R1	1562	Star	S55, S56	
27-O2	27-R1	1562	Star	B46, M32, S27, S28	
27-O3	27-R2	1562	Star	P70/11309, S57	
28-O1	28-R1	1562	Star	F34, M33	
29-O1	28-R1	1562	Star	M65, S80	
29-O1	29-R1	1562	Star	B34, B54	
29-O2	29-R1	1562	Star	A13, C1112, C1121, D29, M34, P70/11313, S81	
29-O3	29-R1	1562	Star	S82	
29-O4	29-R2	1562	Star	B53, M35, P70/11310, S79	
30-O1	30-R1	1562	Star	D19, M36, S84	
30-O2	30-R1	1562	Star	S83	
30-O3	30-R2	1562	Star	S85	
31-O1	31-R1	1562	Star	L2049f, M37	
32-O1	32-R1	1562	Star	A58, H6, L2050, M38, S92	
32-O2	32-R1	1563	Star	B55, B56, B57	
33-O1	33-R1	1564/3	Star	A24, B59, C1113, E70/6584, F52, H7, M39, P70/11314, S93	(33-R1 = 32-R1)
33-O2	33-R2	1564/3	Star	B58, D30, M40, P70/11315, S94, S95	

34–O1	34–R1	1564/3	Star	A23, D7, S89, S90, S91	
34–O2	34–R2	1564/2	Star	A25, B60, F50, F51, F53, L2051a, M41, S87, S88	
35–O1	35–R1	1564/2	Star	M42, S96	
36–O1	36–R1	1566/?	Star	A27, B61, B62, H8, L2051b, M43, P70/11316, S98	
36–O2	36–R2	1566/?	Star	A26, A28, B63, D8, F54, M44, S97	
37–O1	37–R1	1567	Lis	A32, D9, M46, S113, S114, S115, S116	
37–O1	37–R2	1567	Lis	P70/11320	
37–O2	37–R2	1567	Lis	A36, L2051c, M45, P70/11321, P71/488, S101	
37–O3	37–R2	1567	Lis	D31, S99	
37–O3	37–R3	1567	Lis	B64, S104	
37–O3	37–R4	1567	Lis	A31, C1114, H9, M47, N5, S111, S112	
37–O4	37–R2	1567	Lis	S100	
37–O4	37–R5	1567	Lis	F57, M71, S102	
38–O1	38–R1	1567	Lis	D10, F55, L2051d, M48, S110	
38–O2	38–R2	1567	Lis	B65, F56, M49, P70/11319, S117, U213	
39–O1	39–R1	1567	Lis	A29, F8, F58, M73, PA175, S109	
39–O2	39–R2	1567	Lis	A30, B66, C1115, D20, L2051e, M50, P70/11318, P71/487, P82/4083, S103	
39–O2	40–R1	1568/7	Lis	D11, L2051f, H10, M51, P70/11323, S107, S108	(Die 40–R1 = 39–R2)
40–O1	40–R1	1568/7	Lis	A37, A39	
40–O1	40–R2	1568	Lis	A35, A38, B67, B71, B72, B73, C1116, D25, F59, F60, M52, P70/11322, P70/11324, S105, S106	
41–O1	41–R1	1570	Mullet	B31, H12	(Pierced mullet pattern)
42–O1	42–R1	1570	Lis	A40, B68, B69, B74, D32, E77/E1236, F9, H11, M53, S118	
43–O1	43–R1	1571/0	Castle/Lis	A59, B70, D12, H13, L2052, M54 S119, U216, W2	(Die 43–O1 = 42–O1) (Die 43–R1 = 42–R1)
Threepences					
44–O1	44–R1	1561	Star	A60, B22, E66/H3327, F61, L2055, M55, P70/399, S121	
45–O1	45–R1	1562	Star	B23, D16, E76/E373, F11, H15, L2056, M56, P74/1329, PA177, S124	
45–O1	45–R2	1562	Star	A41, F62, F63, F64, M66, P74/1329, P79/10263, S123,	
45–O2	45–R2	1562	Star	B19, E72/H2440, M57, S122	
46–O1	46–R1	1562	Star	A42, A61, B20, C1131, D17, E79/E323, E81/E81, F65, M58, N7, S125	
47–O1	47–R1	1563	Star	S126	
47–O1	48–R1	1564/3	Star	B21, B24, F65, M59, S127	(48–R1 = 47–R1)
Threefarthings					
49–O1	49–R1	1563	Star	B28	
49–O2	49–R1a	1563	Star	D22	(49–R1a = 49–R1 with star recut)
49–O3	49–R1b	1563	Star	B29	(49–R1b = 49–R1 with large mullet recut over star)

Appendix 3. Die Combinations and Provences of Coins Studied (cont.)

Derek Anthony (?) Patterns Struck on Mestrelle's Mill

50–O1	50–R1	1574	Sixpence	IM Mullet B86
51–O1	51–R1	1575	Sixpence	IM Mullet B88
52–O1	52–R1	1575	Threepence	IM Mullet B87, F12, L2057, S134

Defence of the Realm Medal

53–O1	53–R1	23mm in silver	IM Lis A62, B83, N9, S136
53–O1	53–R1	23 mm in gold	IM Lis B89, G1974iii6/287

APPENDIX 4

Chronological Table and Principal Types

Year	*Event*	*Mark*	*Date*	*10/-*	*5/-*	*2/6*	*1/-*	*6d*	*4d*	*3d*	*2d*	*¼d*	*Bust*	*Remarks*
1559	Mestrelle arrives in England													
1560	Sets up machinery													
1561		(Martlet)					12							Hammered pattern
		Mullet					13						A	Pattern
		Star					14							
		Star					15							
	July: Queen's visit to mint	Star		1	7		16		18		19			
		Star					17				20			
	24 Oct: Pyx	——												
	15 Nov: New Denominations	Star	1561					21						
1562		Star	1561					22		44			B	
		Star	1562					23						
	6 June:	Star	1562	2				24		45			C	
	Grindall's	Star	1562					25					D	
	letter	Star	1562	3				26		46				
		Star	1562					27						
		Star	1562					28						Pattée cross
		Star	1562					29						Curly Z
1563		Star	1562					30						Fine tooth border
		Star	1562					31						Pellet border
		Star	1563	4				32		47		49		
	Michaelmas term not kept													
1564		Star	1564	5	8	10		33						
		Star	1564					34		48				Tooth border
		Star	1564					35					E	
1565	No mill coinage													
1566		Star	1566					36						
1567	13 Feb: Pyx	——												
		Lis	1567	6	9	11								
		Lis	1567					37					F	REGI
		Lis	1567					38						REGIN
1568		Lis	1567					39						REGINA
		Lis	1568					40						
	1 Sept: Mestrelle arrested													
1569	No mill coinage													
1570		Mullet	1570					41					G	Pattern
		Lis	1570					42						(also medal 53)
1571	13 Feb: Pyx	——												
		Castle	1571					43						
	Dec: Death of T. Stanley													

Year	*Event*	*Mark*	*Date*	*10/-*	*5/-*	*2/6*	*1/-*	*6d*	*4d*	*3d*	*2d*	*¼d*	*Bust*	*Remarks*
1572	13 Feb: Pyx Trial of Machinery													
1573														
1574		Mullet	1574					50						Pattern
1575		Mullet	1575					51		52				Pattern
1576														
1577	Mestrelle's arrest													
1578	Mestrelle's execution													

Acknowledgments

We wish to thank the many people who have helped us in this project, particularly those who have supplied photographs of coins including the British Museum (R. A. Gardiner), the Ashmolean Museum (Nicholas Mayhew), the Fitzwilliam Museum (Graham Pollard), the Hunterian Museum (Anne Robertson), Spink and Son Ltd. (Patrick Finn and Howard Linecar), the late Peter Sanders, Harry Manville, Linda Fenton and Chris Comber. Coins illustrated are identified according to their source and are reproduced with the permission of their owners.

PLATE I


1-O1
(= 16-O3)
L2038


2-O1
B1


3-O1
B2


1-R1
B2


4-O1
B3


5-O1
B4


5-R1
B4


6-O1
B5


4-R1
B3


7-O1
(= 18-O1)
B6


8-O1
B7


9-O1
B8


6-R1
B5


10-O1
B9


10-R1
B9


7-R1
B6


8-R1
B7


9-R1
B8


11-O1
B10


11-R1
B10


12-O1
B85


13-O1
B30


14-O1
B12


14-O2
M3


12-R1
B85


13-R1
B30


14-R1
B12


14-R2
M3

Gold and Shillings

PLATE 2


15-O1
A6


15-O2
B11


16-O1
(= 1-O1)
D13


16-O2
A3


15-R1
A6


15-R2
B11


16-R1
D13


16-R2
A3


16-O3
A5


18-O1
(= 7-O1)
B16


18-O2
M9


17-O1
A52


16-R3
A5


18-R1
B16


18-R2
M9


17-O2
A52


19-O1
A43


20-O1
B25


20-O2
B26

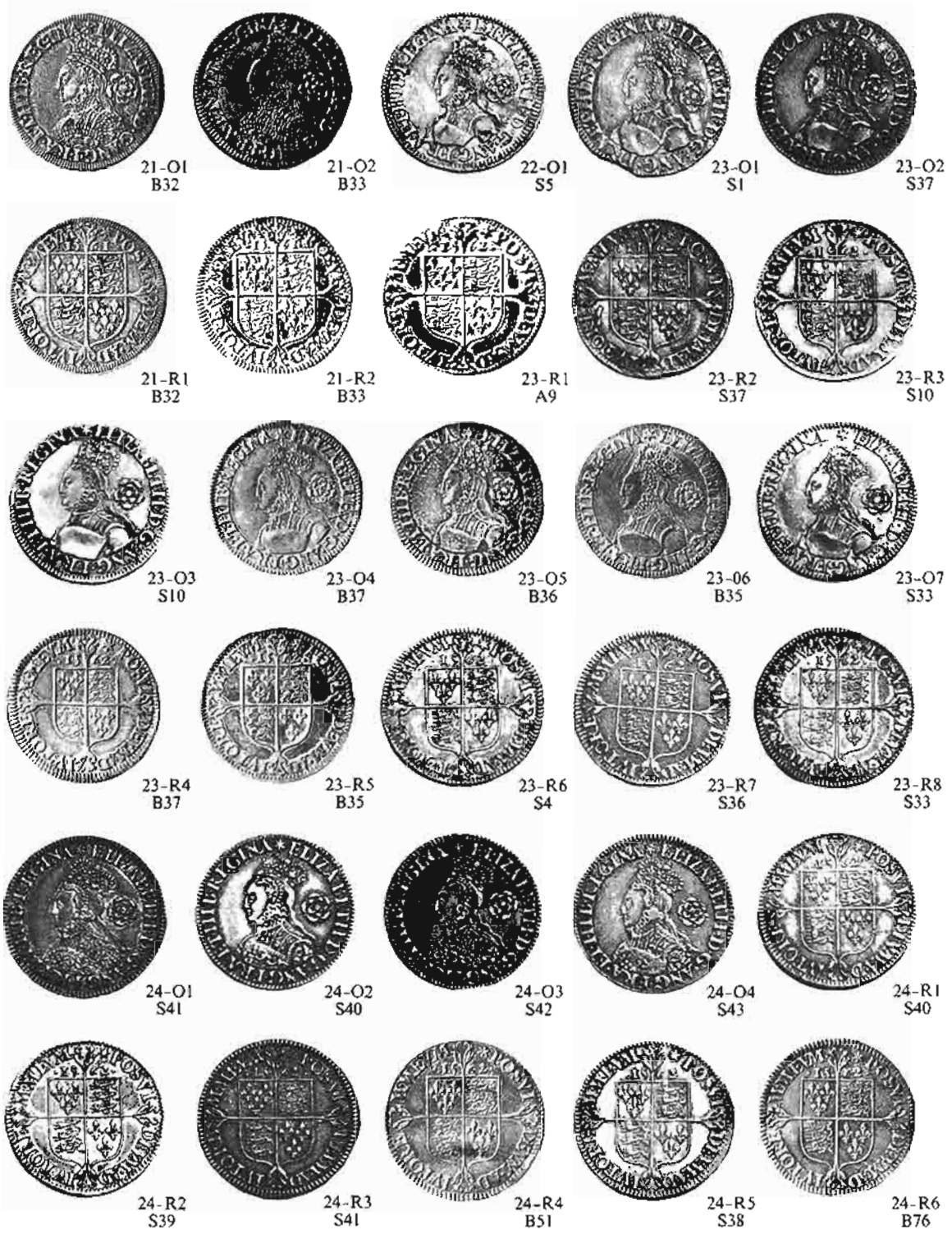

19-R1
A43


20-R1
B25


20-R2
B26

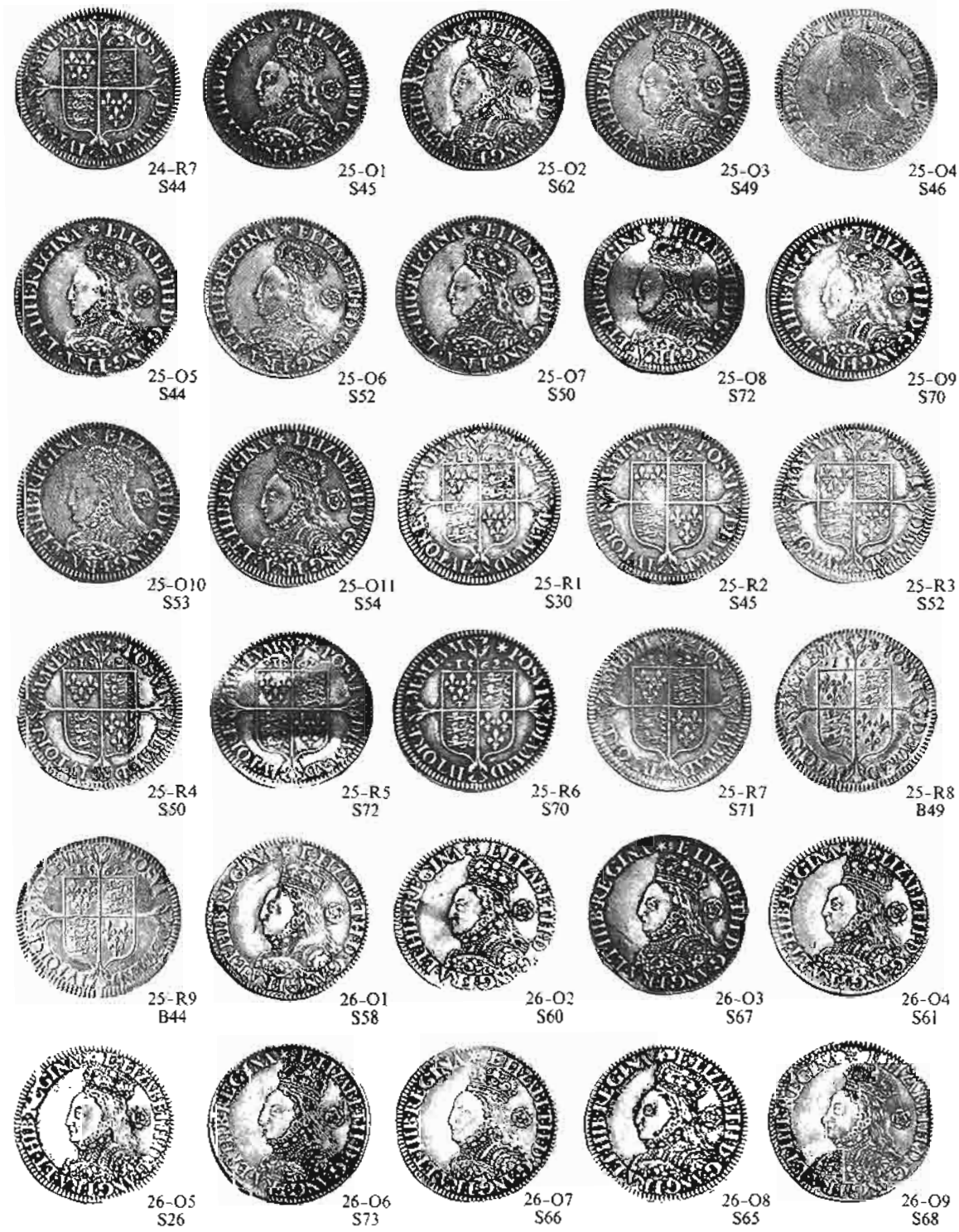
Shillings, Groats, and Halfgroats

PLATE 3



Sixpences 1561–2

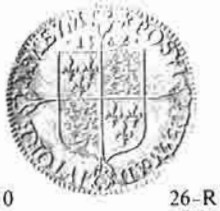
PLATE 4



Sixpences 1562

PLATE 5


26-O10
S59


26-R1
B45


26-R2
S26


26-R3
S69


26-R4
S65


26-R5
H4


26-R6
S59


27-O1
S56


27-O2
S27


27-O3
P70/11309


27-R1
S56


27-R2
P70/11309


28-O1
F34


28-R1
S80


29-O1
S80


29-O2
S81


29-O3
S82


29-O4
B53


29-R1
S82


29-R2
B53


30-O1
S84


30-O2
S83


30-O3
S85


30-R1
S84


30-R2
S85


31-O1
L2O49f


31-R1
L2049f


32-O1
S92


32-O2
B58


32-R1
B55

Sixpences 1562–3

PLATE 6


33-O1
B59


33-O2
S94


33-R1
B59


33-R2
B58


34-O1
S89


34-O2
S87


34-R1
S89


34-R2
B60


35-O1
S96


35-R1
S96


36-O1
B61


36-O2
S97


36-R1
S98


36-R2
S97


37-O1
D9


37-O2
S101


37-O3
B64


37-O4
S102


37-R1
S116


37-R2
S101


37-R3
B64


37-R4
S111


37-R5
S102


38-O1
S110


38-O2
B65


38-R1
S110


38-R2
B65

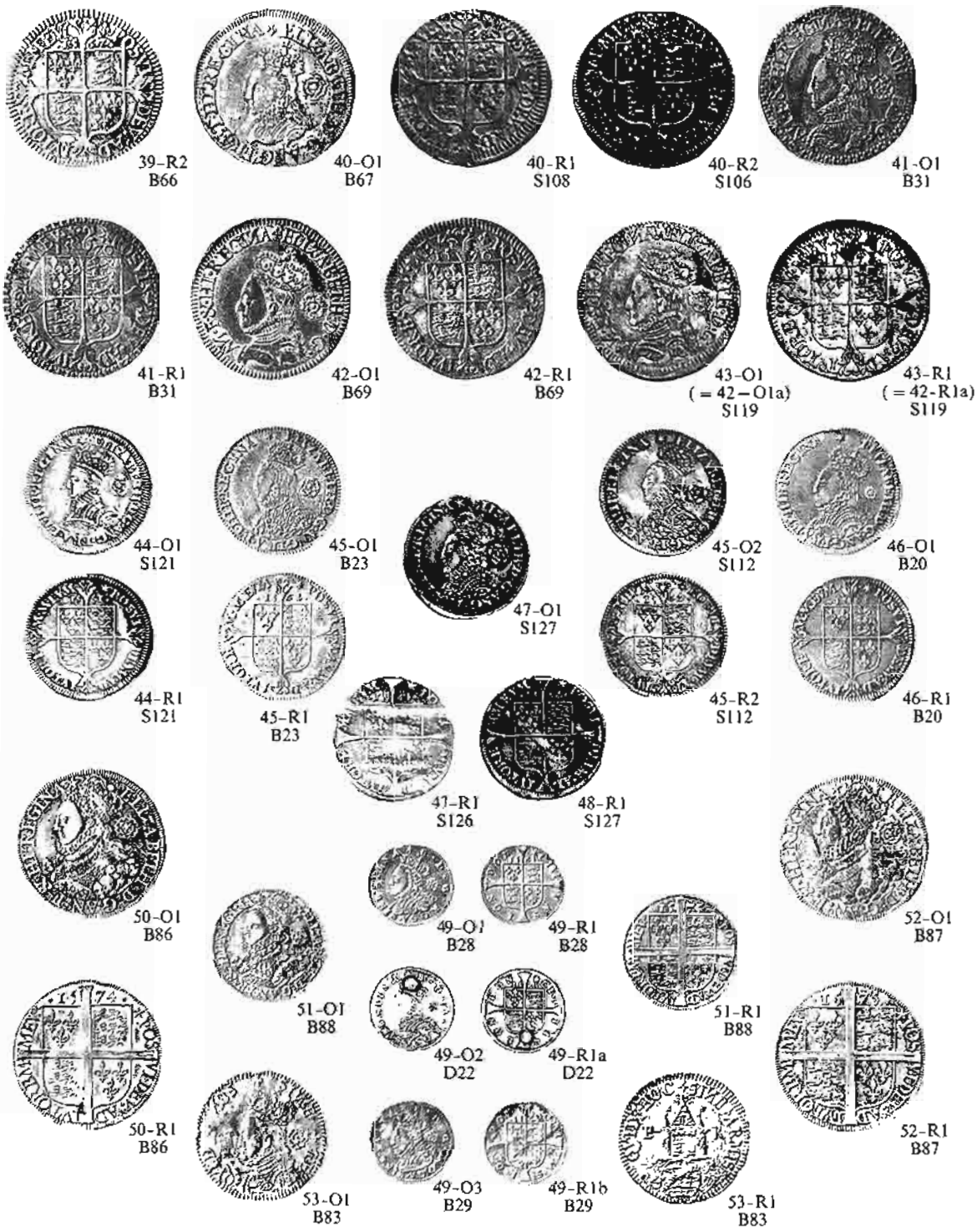

39-O1
F8


39-O2
B66


39-R1
F8

Sixpences 1564–7

PLATE 7



Sixpences 1567-71, Threepence, Threefarthings, Patterns, and Medals

JOHN MILTON, MEDALLIST, 1759–1805

T. STAINTON

JOHN Milton was active as a medallist during the middle years of George III's reign. His works include medals, tokens, and a variety of kindred pieces. Many of his productions are of continuing numismatic and historical interest, and are by no means forgotten, while others are exceedingly rare and little known. Milton's own talents, coupled with a degree of good fortune, enabled him to escape from the total obscurity that was the lot of many medallists: he was noticed in his time, and some of the events in his career are vaguely known to us. Nevertheless, his personal history has till now remained ill-defined, while many problems relating to his works are still unresolved. Some of the difficulty is chronological, and obviously the first requisite is a reliable framework of dates. In the present study an attempt has been made to present a more coherent account of Milton's career than has hitherto been available, and to establish a more confident chronology for both his life and works.

Hitherto almost nothing has been known about Milton's early years before he joined the Mint in 1787. Such evidence as there was seemed to indicate an already long career at that time. One or two of his medals bear considerably earlier dates, and there was also the unsupported but unassailable remark by Edward Hawkins to the effect that Milton's works date from 1760.[1] Until this statement could be verified or refuted Milton's past was bound to remain a mystery. Fortunately the whole problem of these early years has now been resolved with the discovery that Milton was born in 1759 (see Appendix). With this knowledge everything falls into place. We see now that the date given by Hawkins must be an aberration; that Milton was only a young man when he joined the Mint; and that there cannot be any great period of years to account for. On examination we find that the early dates on some of the medals are deceptive, and unrelated to the date of production. For example, the Aberdeen medal (No. 12) bears the date 1771, but was in fact produced in 1795. More generally the results of the present study suggest that Milton's career as a medallist began in or shortly before 1785, giving him no more than twenty active years before his premature death in 1805, at the age of forty-five. Hawkins also misled us on the period of Milton's employment by the Mint, which he stated as running from 1789 to 1798. Yet correctly this should be from March 1787 to March 1797, as the Mint records confirm. The difference is small, but critical when we come to examine his works in detail. Unfortunately the particulars given by Hawkins were repeated unquestioningly by subsequent biographers, and a false orthodoxy was thus established. A brief outline should now read:

> John Milton, born 19 July 1759; died 11 February 1805; employed at the Royal Mint from March 1787 to March 1797. His known works date from 1785.

In that year Milton's first medal (for the Society of Industry) was issued; and he exhibited for the first time at the Royal Academy, sending in a seal and an engraved gem.[2] The seal is of particular interest since the description of it, which we owe to Forrer, seems to indicate that it was a personal trade-card or bill-heading of some sort, giving Milton's address and his profession of engraver.[3] If this is right it suggests that about this time he was setting up in

[1] E. Hawkins, *Medallic Illustrations of the History of Great Britain and Ireland to the Death of George II*, 2 vols (London, 1885), II, 733.

[2] Algernon Graves, *The Royal Academy of Arts, A Complete Dictionary of Contributors*, 8 vols (London, 1905–6), V, 259.

[3] L. Forrer, *Biographical Dictionary of Medallists*, 8 vols (London, 1904–30), IV, 85.

business on his own account. Regrettably nothing is known of Milton's background or training, but it is likely that he was brought up to the trade of seal-engraver, and he so described himself in his application for a marriage license at the beginning of 1786.[4] His reputation as a seal-engraver was mentioned by Sir Joseph Banks in a letter of 1802, and it is probable that his livelihood was always dependant on that line of work in metal or stone, especially when we consider that the whole body of his medallic work (as far as we know it) could hardly have provided him with a tolerable living when spread over twenty years. Nor need the position have been different during his time at the Mint, since the modest remuneration that they provided, £80 a year and free housing, was intended only to retain, not to support, the artists concerned.

We may wonder what induced Milton to turn his hand to medallic die-engraving. Public demand for medals was limited and unpredictable, and the prospects could hardly have been promising for a solitary artist. It is easier to imagine that he received encouragement from some source, and there is a good deal to suggest that that source was Lewis Pingo, the chief engraver at the Mint. Enquiries from the public for medallic work, and no doubt for other forms of engraving, gravitated naturally to the Mint as the chief repository of the requisite skills, and we know that Lewis and his brother John carried on what must have been quite a considerable business from the old family home in Gray's Inn Lane, where, no doubt, such enquiries were processed. As their trade-cards in the British Museum show, they described themselves in 1785 as engravers, and in 1791 as engravers and medallists.[5] Lewis's own signature appears on the occasional prestigious medal such as the Cook medal of 1784 for the Royal Society, or the Medical Society medal of 1787, but much of the work they handled must be unknown to us, and some of it may have been sub-contracted to other artists of whom we may imagine the young seal-engraver, John Milton, to have been one. It is hard to believe that the Lincolnshire Society of Industry, for example, would have directed their enquiry in 1784 or 1785 to an entirely unknown and untried engraver, as Milton then was, and much more likely that they addressed it to the Mint; and that it was Pingo who put the work out to Milton, persuading him to try his hand, and promising more work if successful. The same consideration applies to the first of the Anglesey Pennies executed apparently in 1786.

After Milton's appointment to the Mint in 1787, made no doubt on Pingo's recommendation, he appears to have rapidly assumed the position of London's leading, or most active, medallist. We also notice that about the same time Pingo virtually abandoned medal work, and after 1790 never signed another medal. These two observed facts clearly point to some sort of agreement between them whereby the work that Pingo obtained was passed to Milton to execute. Their collaboration is further suggested on stylistic grounds, in that the typical Milton style, most apparent in some of his allegorical female figures with their tiny heads and voluminous drapery, is reminiscent of Pingo's own style, a fact which may well indicate that Pingo was supplying the designs for Milton to work from. These conjectural remarks, it is hoped, may help to explain the observed facts, and to paint a plausible picture.

In 1787, probably due to the pressures of coinage, the Mint decided to strengthen the engravers' department by recruiting new talent. J. R. Ocks, the second engraver, who was well into his eighties if we can believe Sir John Craig, was pensioned off, and John Pingo promoted into his place. Milton was brought in as third engraver, or (more officially) 'probationer or apprentice under the chief engraver'. In the master's letter of 6 February 1787 recommending these changes to the Treasury Milton is described as 'a young Artist of very promising abilities', and the purpose is stated in the ritual words 'in order to his being instructed and perfected in the Art of Graving Dies and Puncheons, for the service of

[4] Marriage allegation of the Bishop of London (MS 10091 E/99, Box 1). He was married at St Martin in the Fields on 14 January 1786.

[5] British Museum, Department of Prints and Drawings, Banks Collection of Tradesmens' Cards, 59.134 and 59.135.

his Majesty's Mint'. The Treasury warrant confirming the appointment was dated 13 March 1787.[6] The ten years that Milton spent in the Mint service represent half his working life, and much of his output of medals and tokens belongs to this period. But of his actual work for the Mint itself no details whatever are known. This need not surprise us in view of his relatively humble position as third engraver. There is, however, a remark by Thomas Sharp which should be mentioned since his views generally deserve respect. In his Chetwynd catalogue of 1834 he described Milton as 'that powerful and skilful engraver, whose dies for the Mint, and especially his pattern pieces . . . discover so much genius and vigour of execution'.[7] What dies does he mean, and what pattern pieces? We know that Sharp wrongly attributed the Isle of Man coinage of 1786 to Milton, and he could be thinking of those dies. He may also have had in mind Milton's pattern shilling of 1798, not realizing that it was produced well after Milton had left the Mint. To this extent Sharp's remark can be explained away, and very probably there is no substance in it at all.

The discovery that Milton had been supplying dies for the counterfeiting of Louis d'ors and other foreign gold coin came about when, in October 1796, the coiners in question were taken up and examined by the authorities. The men claimed that Milton had assured them there was 'nothing wrong in it'. The Mint were naturally horrified at the news, and quickly held an enquiry. After considering the allegations, and hearing Milton's admission at least to the extent of having supplied the dies, they found that he stood 'highly culpable' and had 'forfeited the future confidence of the Office'; and suspended him from his employment. Their findings went to the Treasury who confirmed their action and ordered the case to go to the Law Officers with a view to prosecution. These gentlemen, however, reported that 'it does not appear to us that the conduct of Mr Milton can under the circumstances stated be effectually made the subject of any prosecution'; adding their opinion that 'the law respecting instruments which may be used in counterfeiting foreign coin seemed to require attention'. The affair then remained in the balance until March 1797 when the Treasury ordered that Milton be dismissed. Already in the previous October the coiners had come up for trial on the high treason charge (under the act 8 & 9 William III c. 26) of having coining instruments in their possession, but had been acquitted, partly from lack of evidence, and partly, it seems, from uncertainty whether this act could be applied to foreign coin. A second charge brought under 14 Elizabeth c. 3, which made it misprision of treason to counterfeit gold and silver coin of other realms not current in this realm, had been dropped after the first acquittal.[8] Had it gone otherwise Milton could, we must suppose, have been charged as an accessory, and been liable to the same penalties. By itself the provision of dies was not contrary to any statutory law except when it related to coin of the realm, and the Law Officers' decision in the Milton case is quite understandable.

The law relating to the counterfeiting of foreign coin was extremely defective at this time. Patrick Colquhoun, the magistrate who wrote so forcefully on crime and punishment, remarked that the practice 'does not at present seem punishable by an existing law'. It was very profitable, and carried on with virtual impunity.[9] The William III act was designed primarily to protect the coin of the realm, and one gets the impression that it was only the result of bad drafting that some of its provisions could be interpreted as applying to unauthorized coining in general.[10] The Elizabethan act was still on the statute book, but so

[6] PRO, MINT 1/14, pp. 2–6. For Ocks's age see Sir John Craig, *The Mint* (Cambridge, 1953), p. 233.

[7] Thomas Sharp, *A Catalogue of Provincial Copper Coins . . . in the Collection of Sir George Chetwynd* (London, 1834), p. iv.

[8] PRO, MINT 1/14, pp. 307–12bis, 317–19; MINT 4/20, letters between J. Morrison and the master, 31 October 1796 to 1 March 1797.

[9] Patrick Colquhoun, *A Treatise on the Police of the Metropolis*, fourth edition (London, 1797), p. 127. He lists as being currently counterfeited 'Half Johannas, Louis d'ors, French half-crowns, Prussian silver coin; and also Sequins of Turkey and Pagodas of India'. 'These foreign coins have generally been sold as articles of commerce for the purpose of being fraudulently circulated in the British Colonies or in Foreign Countries'.

[10] 8 & 9 William III c. 26; *Statutes of the Realm*, vol. VII; R. Ruding, *Annals of the Coinage*, third edition, 3 vols (London, 1840), II, 52. Ruding's summary is inadequate for interpretation.

ineffective, according to Colquhoun, as to be hardly used.[11] This state of impotence came to be officially recognized, perhaps as a result of the Milton case, and was remedied by the introduction of new legislation in July 1797 making it a felony to counterfeit foreign gold or silver coin not current in the realm.[12] Louis d'ors were mentioned in the act as one of the main abuses.

In ordering Milton's dismissal the Treasury must have considered that counterfeiting foreign coin was contrary to the intention of the law, and was reprehensible in the eyes of all right-minded people; and that his conduct was too questionable to be tolerated in a public servant. It is not difficult for us to agree. Colquhoun thought the practice shaming to the national character.[13] He detested the underworld in which many of these operations took place, and deplored the participation of certain respectable people who should have known better. Matthew Boulton had several enquiries for the manufacture of Louis d'ors, but swore that his presses should never strike a dishonourable blow. It should be added that he also took legal advice and was warned of the danger under the Elizabethan act.[14] Yet Milton seems to have come off rather lightly.[15] Even the Mint appear to have acted more in sorrow than in anger, hoping that a severe reprimand would be sufficient. In their report to the Treasury they were able to add the mitigating remark that 'Mr Milton has been employed as Probationer Engraver for ten years during which time he has performed his duty with diligence, and is considered as an artist of great professional skill and ability'. Sir Joseph Banks, who was always true to his friends, and usually hostile to the Treasury officials, took the line that Milton had been unfairly treated, remarking later in a letter to Fullarton that Milton had 'smarted for the legal interpretation of an imaginary crime'.[16] Milton continued a member of the Antiquaries' Society, and there is no apparent hint of stigma. Two of the letters that he wrote in his own defence have survived, one to the master of the Mint, and another to the privy counsellor, Charles Greville.[17] Briefly, he pleaded that he had no idea of doing wrong, and had not sought to benefit beyond the normal return on engraving dies. The tone of injured innocence is not perhaps totally convincing.

Milton's dismissal from the Mint does not appear to have damaged his career in the long run. We notice Matthew Young[18] commissioning him to engrave his trade token in 1798, and employing him on the Fullarton tokens, and this connection was no doubt very valuable. Banks, whose support may have been decisive, made sure that Milton obtained the commission for the Royal Society Rumford medal in 1799, and the Board of Agriculture medal in 1802. His known output after this time is small, but this probably reflects a lessening demand, and the fact that Birmingham was becoming the centre for medal production. Milton's acquaintance with Banks was not new at this time, since Banks had been one of his sponsors for the Antiquaries' Society as early as 1792; and very likely it was Miss Banks

[11] 14 Elizabeth c. 3; Ruding, I, 345. Colquhoun (p. 127) stated that this act 'has not been put in force for many years', but does not specify its defects.

[12] 37 George III c. 126, section 2. Colquhoun welcomed its introduction in his later editions.

[13] Colquhoun, p. 127.

[14] Birmingham Reference Library, Matthew Boulton Papers ('MBP'), correspondence index. Instances are: enquiry for 5 to £10,000 of Portuguese Johannes for the Danish West Indies (A. Collins to Boulton, 1 November 1794); enquiry for Louis d'ors, and request for advice about its legality (J. Bayley to Boulton, 16 February 1795); Boulton states that he has been offered an order for 100,000 Louis d'ors. 'Some scoundrels in Birmingham have made French Assignats and are making quantities of counterfeit Louis d'ors' (Boulton to Senovert, 15 October 1795); enquiry from the bankers, Hammersley, for £20,000 Louis d'ors 'of the fineness of those struck by the French Government' (T. Hammersley to Boulton, 2 April 1796). Regarding legal advice, see W. Hunt to Boulton, 3 January 1796.

[15] At least one of Boulton's enquiries seems to have been for Louis d'ors of full weight and fineness, whereas some of the people Colquhoun had in mind would at best have adulterated them with base metal to about half value. Surely we can distinguish a kind of above-board counterfeiting from the more fraudulent variety.

[16] British Museum (Natural History), Botany Library, Dawson Turner Collection ('BM(NH), DTC'), volume XI, 209–10, Banks to Fullarton, 2 May 1799.

[17] PRO, MINT 4/20, the master to Morrison, 11 February 1797; BL, Greville/Hamilton correspondence, Additional MS 40,715, fols 75–6.

[18] The well-known coin-dealer. For an obituary see the *Gentleman's Magazine*, 1838, ii, 107.

who maintained the contact in the course of her coin and token collecting.[19] Milton's election to that exclusive and august society at the early age of thirty-two is somewhat remarkable, and must speak for his qualities. Membership was reserved for serious antiquaries, or for amateurs of property and social standing, or for people high in their professions, and it is hard to see which of these classes Milton belonged to. The only other artist elected in his year was the president of the Royal Academy. Milton's testimonial described him as 'a gentleman well versed in the study of antiquities and likely to become a useful and valuable member'. A kind of numismatic thread connects his sponsors who were: the president, Lord Leicester, at that time master of the Mint; James Bindley, George Keate, and Samuel Tyssen, all collectors; Sir Joseph Banks; the Rev. John Grose, minister at St Peter Advincula in the Tower; and Richard Haworth, unknown.[20] We can surely conclude that Milton was someone whose opinions were worth listening to, and that his society and conversation were generally found agreeable.

A brief but valuable assessment of Milton's capabilities is given us by Sir Joseph Banks. Replying in June 1802 to an enquiry about medallists and seal-engravers from John Foster, the Irish politician, Banks wrote: 'I have no hesitation in recommending Mr Milton who lives in Rolls Building, both to cut your seal and to sink your die, as I have no doubt of his superiority in both branches. He has been employed by the Royal Society in sinking a die for a gold medal of £56 value; and I have recommended him to the Board of Agriculture to engrave the Duke's medal'. After offering some comments on the designs that Foster had sent him he continued: 'though I recommend Mr Milton as a die-sinker and a seal-cutter, I do not mean to state his merits as a designer in the same degree of superiority. Mr Flaxman will design reverses for you with elegant and classical authority if you choose to employ him; and he is not expensive'.[21] Banks here confirms what we had suspected, that Milton was known as a seal-engraver as well as a medallist; and that he was either not thought of as a fluent designer, or else had not come to terms with the modern neo-classical forms. Although Milton was sometimes credited with a fine faculty for invention it is probable that the major part of his medallic work was done to other peoples' designs, as was so often true of medallists. Two of his medals, the Medical Lyceum and the Board of Agriculture, are known to have been designed by Flaxman, and (as already mentioned) we may detect Pingo's hand in some of his allegorical types; but no firm conclusion is really possible.

Milton's name occurs frequently in the literature on tokens that grew up in the 1790s, and there is occasional comment on his work. Among these writers was the invaluable Charles Pye who contributed vital information that might not otherwise have been recovered. Two or three attributions to Milton are solely due to Pye, and should be trustworthy for he tells us that Milton supplied him with information on the London tokens and 'kindly gave a most minute account of all in which he was employed'.[22] It is worth observing that Milton's part in the token wave after his abortive Anglesey Penny of 1786 was fairly small, and restricted to a few select pieces from 1795 onwards. Nevertheless, it was the fashion among the token enthusiasts to write of Milton's artistic abilities in quite extravagant terms, and possibly it suited the promotional interests of some of the dealers to encourage this. A typicle example is seen in the introduction to James Conder's publication of 1798: 'It were ungenerous to omit giving due praise to the performances of Mr Milton. The minute and successful labour bestowed on his Coins for Barbadoes, Ipswich Penny, the piece having the head of Wallace, Reverse, "Scotia Rediviva", and some others, ranks them high

[19] Sarah Banks is briefly noticed in *DNB*. Among her manuscript material in the Department of Coins and Medals at the British Museum are the eight bound volumes, 'S.S. Banks Catalogue of Coins', to which a number of references are made hereafter.

[20] Extracts from the Society's minutes, kindly communicated by the Librarian.

[21] BM(NH), DTC, XIII, 183–4.

[22] Charles Pye, *Provincial Coins and Tokens issued from the Year 1787 to the Year 1801* (Birmingham, 1801), p. 3.

among the best productions of modern art'.[23] A high claim indeed! We have already noticed Sharp's estimate of Milton's genius. Sharp, who wrote in 1834, was the last of that tribe. His memory went back to Milton's lifetime, and he was writing with Matthew Young at his elbow, as it were; and Young knew Milton well. Without labouring the point, we would not now rate Milton so highly, noticing for example that he never truly mastered portraiture, but even so his work is usually vigorous and interesting.

We know hardly anything more of Milton's later years apart from the evidence of his occasional works. The last dated piece is the Orchard farthing of 1804 which is reasonably attributed to him. We can be sure that Miss Banks kept in touch with him, and among her manuscripts is a note dated 1803 to the effect that he was then working on the dies for the Gwyneddigion Society medal. His death early in 1805 may well have been sudden and unexpected, and the cause is not known.

Much trouble would have been saved if any authentic lists of Milton's works had survived. One gets the impression that he was very ready to disseminate information of this kind. Charles Pye's list of tokens has been mentioned already, and we know that the dealer, Richard Miles,[24] had another of Milton's lists, giving (if we can judge from the Barbados item) extensive details of dates and mintages, costs and clients. No doubt such information was also in the hands of Matthew Young, James Conder, and others. As things are, the list must now be reconstructed, and it cannot be supposed that it is complete. In the catalogue that follows the arrangement is partly guided by convenience, and is not intended to be dogmatic about definitions. Where no location is stated it can be assumed that the British Museum have examples.[25] The given metals have either been observed or cited elsewhere.

APPENDIX

THE JOHN BOGLE MINIATURE

The very fine miniature of Milton by John Bogle now in the Victoria & Albert Museum is signed and dated 1788. The identity of the sitter is known from the inscription on the back of the frame which reads: 'John Milton/FAS/Tower of London/Natus 19 July 1759/Obit 11 February 1805/Painted 1788/Buried at St. Dunstans/Fleet Street'. The reliability of this information is important as it is our source for Milton's birthdate, but the confident factuality of the inscription is entirely reassuring in this respect, especially as the other details given are precisely correct. The writer was probably Milton's son, Henry, who was also a seal-engraver and accustomed to the lapidary use of Latin.

The painting was acquired by the Museum in 1884 by purchase from a Mr A. Matthews of Torquay. It was published by G. C. Williamson in 1904 in his *History of Portrait Miniatures*, and again in 1923 by Basil Long in an article in *The Connoisseur*. It portrays a young man, careful of his appearance, almost a dandy, and with a strange, intelligent face. The sitter is presented in profile which, as Basil Long remarked, is unusual for miniatures.[26]

On a label attached to the miniature is another inscription reading: 'Milton, chief engraver at the Mint/my first wife's father'. This writer is evidently more remote and less well-informed, but his note is highly intriguing both as regards Milton's family and the history of the miniature. We have to find a son-in-law who had at least two wives. Unfortunately

[23] James Conder, *An Arrangement of Provincial Coins, Tokens, and Medalets* (Ipswich, 1798), footnote to unpaginated preface by James Wright of Dundee.

[24] Coin-dealer, 1740–1819. *Gentleman's Magazine*, 1819, i, 585, and memoir, 1820, i, 179–82.

[25] The friendly assistance of the Department of Coins and Medals has been vital in the preparation of this paper, and I gladly acknowledge my debt to them.

[26] G. C. Williamson, *History of Portrait Miniatures, 1531–1860*, 2 vols (London, 1904), I, 160, and Plate LXVI, 3; Basil Long, 'John Bogle, Miniature Painter', *Connoisseur*, vol. LXVI (1923), pp. 218–22; Basil Long, *British Miniaturists, 1520–1860* (London, 1929), pp. 33–4.

there are two candidates, and it is difficult to choose between them. Emma Milton married a dentist, John Palmer Delafons, who died in 1869. His second wife was one Anne Milton, presumably a cousin of the family. Milton's other daughter, Sarah, was almost certainly the first wife of the painter, Sir George Hayter, who died in 1871; and Hayter had three wives at least. The problem must rest here for the present. I am grateful to Mr John Murdoch of the Museum for the information on the miniature, and for helpful discussion of the problems it presents.

MILTON'S WORKS

The numbers asterisked are illustrated in the plates.

Acknowledgement of the photographs is due to the Ashmolean Museum for No. 17; to the Welsh Folk Museum for No. 23; to the National Museum, Copenhagen, for No. 32; and to the British Museum for all others except No. 50.

MEDALS

No. 1.* Society of Industry, 1785

Obverse: figures of Plenty and Peace, beehive between them; signed below, I MILTON F.; around, PLENTY & PEACE ARE THE FRUITS OF INDUSTRY & SUBORDINATION.

Reverse: centre blank for awardee's name; around, SOCIETY OF INDUSTRY FOUNDED XXIX NOVEMBER MDCCLXXXIII.

Silver and copper; diameter 34 mm.

The first awards of this medal were in March 1785. The society's first accounts to April 1785 included the items:

	£.	s.	d.
Expense of dies for the medals	26	4	6
14 plated medals for premiums	2	6	8
123 copper medals for premiums	11	5	6
7 silver and 2 plated medals for present to overseers	3	4	8
57 silver medals for sale to subscribers	23	9	2
27 medals unpaid for	14	3	6

Silver medals were given to some of the trustees. These categories appear to cover the known surviving examples, among which is Miss Banks's silver subscriber medal of 1786 in the British Museum. In the first six years the total number of copper medals awarded was 664.

The society's activities and guiding principles are fully described by the Rev. R. G. Bouyer in his publication. Further important details on the premiums are given by Eden, who also comments on the comparative merits of the scheme. The society operated working schools for the children of the poor, training and working them as Jersey spinners. The generous system of awards was apparently Bouyer's brainchild, and comprised not only medals but useful sets of clothing, and future bounties for apprenticeship and marriage. About 143 parishes were united in the scheme, the chief town centres being Louth, Alford, Horncastle, and Spilsby. Other comparable schemes existed, but Bouyer appears to have looked more benignly than most on the little pupils and their well-being, and was certainly most effective in arousing the interest of the local landowners and gentry, and tapping their funds. All parties were bound together by the common interest in wool, and it was the society which promoted the fund-raising 'stuff balls'. In Bouyer's words, 'the annual balls given first at Alford and afterwards at Lincoln to all Ladies drest in the Stuff manufacture of the County, have been of singular service'.

(*Catalogue of the Montague Guest Collection of Badges, Tokens and Passes*, edited by R. A. Smith (London, 1930), p. 128, No. 1046, and Plate V; W. J. Davis and A. W. Waters, *Tickets and Passes of Great Britain and Ireland* (London, 1922), p. 137, Nos. 285–7, where two variant obverses are noted. See also [R. G. Bouyer], *An Account of the Origin, Proceedings, and Intentions of the Society for the Promotion of Industry in the Southern District of the Parts of Lindsey, in the County of Lincoln* (Louth, c.1790); Frederick M. Eden, *The State of the Poor*, 2 vols (London, 1797), II, 398–403, and 408–16).

No. 2.* Gartmore Gold Medal, Glasgow University, 1787

Obverse: the old College, Glasgow; above, EX ACAD. GLASG. DECRETO.; below, TULIT.

Reverse: figure of Liberty; around, LIBERTATE. EXTINCTA. NULLA. VIRTUS.; signed in exergue, I. MILTON. F.

Gold, silver and copper; diameter 42 mm.

This prize medal was endowed in 1787 by Robert Graham of Gartmore (1735–97) 'to be given, once in two years, for the best Discourse on Political Liberty'. Graham entered politics late in life as a Foxite and

reformer, but has a more enduring fame as the author of a poem in the *Golden Treasury*. The deed instituting the medal was dated 17 December 1787, but the dies had already been made and paid for, and were then, as the deed states, in the custody of John Milton at the Mint. The deed also assigned to the University Milton's bond of 26 April 1787 in which he undertook to furnish a medal every two years at the price of £6. 6s. 0d., being £5. 15s. 6d. for one gold medal, and 10s. 6d. for workmanship; or, if called upon to do so, to hand over the dies to the University. Presumably Milton engraved the dies during the summer of 1787.

(R. W. Cochran-Patrick, *Catalogue of the Medals of Scotland* (Edinburgh, 1884), p. 151, Plate XXXI, 4; *Deeds instituting Bursaries, Scholarships, and other Foundations in the College and University of Glasgow*, Maitland Club (Glasgow, 1850), pp. 206–13).

No. 3.* The Medical Lyceum
Obverse: jugate heads of Drs Fordyce and Hunter; around, GEORGIVS. FORDYCE. ET. JOANNES. HVNTER. PATRONI.; signed below, I. MILTON. F.
Reverse: snake casting its slough; around, RENOVANDO VIGET; below, LYCEVM. MEDICVM / I.M.F. TOWER.
Silver and copper; diameter 42 mm.

The Lyceum was founded in 1785, but the Mint signature indicates a later date for the medal. There can be little doubt that this was Milton's exhibit at the Academy in 1790, 'a medal containing two portraits'. Flaxman's drawing at the Victoria & Albert Museum indicates that he was the designer of the medal, and one might suppose that the drawing was made before August 1787 when he departed for his long sojourn in Italy. Production of the medal can be put at 1787–90.

(L. Brown, *A Catalogue of British Historical Medals, 1760–1960*, I (1980), No. 262; *John Flaxman, R.A.*, edited by D. Bindman (Royal Academy Exhibition Catalogue, 1979), pp. 135–8).

No. 4.* Royal Military Club, Jamaica
Obverse: the pillars of the State supporting the crown, surrounded by naval and military emblems; around, ROYAL. MILITARY. CLUB. INSTITUTED. AT. JAMAICA. A.D. 1788.; in exergue, banner with NAVY AND ARMY, and signature, I.M.F. An extension above forms a loop, and another below is inscribed UNANIMITY.
Reverse: star and garter; the upper extension has the cypher W H (William Henry, the future duke of Clarence ?); the lower extension has GLORIA PATRIAE.
Gold, copper; dimensions 63 X 36 mm.

The writer in the *War Medal Record* described an example in gold, probably unique. He, or rather his informant in Jamaica, traced the foundation of the club to 21 August 1788, 'the birthday of its patron Prince William, the year of his visit to the Island'. The British Museum example is in copper, from the Hawkins collection. The medal illustrated in Grimshaw is identical except that the inscription 'For Merit. Tipperary Regl. School. AD 1806' stands in place of 'Royal Military Club Instituted at Jamaica A.D. 1788'. Forrer mentions another application of these dies, also presumably after Milton's death.

(*The War Medal Record*, edited by Spink & Sons, 2 vols (London, 1896–8), II, 13–14, and Plate XIII; compare M. E. Grimshaw, *Silver Medals, Badges and Trophies from Schools* (Cambridge, 1981), p. 47, No. 153; and Forrer, IV, 85).

No. 5.* Merlin's Temple of Music, 1788
Obverse: magician seated and holding wand; around, AMBROSIUS. MERLIN. MDCCLXXXVIII.; signed, I. MILTON. F.
Reverse: pipe organ in kiosk; around, TEMPLE OF MUSIC.
Copper; diameter 40 mm.

There can be no doubt that this medal was made for the great showman and inventor, John Joseph Merlin (1735–1803). Merlin's career and inventions, and his 'Mechanical Museum', are very adequately described by Altick. The quaint figure of the necromancer, Ambrosius Merlin, with his leaden wand as portrayed on the medal appears to be a faithful representation of one of Merlin's automaton creations. Gainsborough's fine portrait of Merlin was recently acquired by the Iveagh Bequest at Kenwood, who have collected extensive evidence on Merlin's activities.

(Brown, No. 293; Davis & Waters, p. 78, No. 239a; Richard D. Altick, *The Shows of London* (Cambridge, Mass:, and London, 1978), pp. 72–6).

No. 6.* German Town, 1789
Obverse: view of the battle at Chew house; signed in exergue, I. MILTON. F.
Reverse: wreath, and within, GERMAN TOWN OCT^{R}. 4. 1777.
Silver and copper; diameter 44 mm.

The action portrayed on this medal took place during the American war at Germantown near Philadelphia, and is also known as the defence of Chew House by the 40th Regiment under Colonel Musgrave. Gordon

followed other writers in stating that the medal was commissioned by Musgrave, but this is not so. The donor was General Sir George Osborn who was the Regiment's patron colonel from 1786 to 1818. Smythies quotes an inspection report of 1789 (such things apparently survive) stating that the officers 'wore a silver medal round their necks presented to them by the present colonel in memory of the very gallant and noble stand the regiment made at Germantown'. One is probably right to take 1789 as the nominal date of issue, which certainly cannot be earlier than 1786. Later uses of the medal are discussed by Gordon. Germantown was formerly written as two words.

(G. Tancred, *Historical Records of Medals and Honorary Distinctions* (London, 1891), p. 332; C. Wyllys Betts, *American Colonial History illustrated by Contemporary Medals* (New York, 1894), p. 251; L. L. Gordon, *British Battles and Medals*, fifth edition (London, 1979), p. 10; all of whom illustrate the medal. See also R. H. R. Smythies, *Prince of Wales's Volunteers. Historical Records of the 40th Regiment* (Devonport, 1894), pp. 467, 499–500, and appendix).

No. 7.* Recovery of George III, 1789
Obverse: head of George III; around, GEORGIVS. III. DEI. GRATIA.; signed on truncation, I MILTON F.
Reverse: City of London shield; above, VISITED ST PAUL'S; in exergue, 23 APRIL 1789.
Silver and copper; diameter 33 mm.

(Brown, No. 295; R. Dalton and S. H. Hamer, *The Provincial Token-Coinage of the 18th Century* (1910-18), Middlesex, No. 177).

No. 8.* Duke of Atholl's Prize Medals, 1790
A. *Obverse*: country scene, ploughing, reaping, and a farmstead and hills beyond; around, GOD SPEED THE FIELD. D. Athole (cursive, and D A monogrammed). PRIZE MEDAL. 1790.; signed, I. MILTON. F.
Reverse: laurel wreath, blank within for inscription; signed below, I.M.F. Mint.
B. *Obverse*: domestic scene, women spinning and knitting; around, as A, except, GOD SPEED THE HOUSE.
Reverse: as A.
C. Medal composed of the obverses of A and B.
Silver and copper; diameter 48 mm.

In her manuscript catalogue Miss Banks described these medals as the mens' prize, the womens', and the double prize medal for man and woman. The British Museum have examples of each, with the double prize in silver and copper. Strangely this Scottish medal, or set of medals, is not known at the National Museum in Edinburgh. No doubt Miss Banks obtained the British Museum examples direct from Milton's press. The medals were evidently awarded on the Atholl estates at Dunkeld, for the writer in the *Statistical Account* notes (p. 482n.) that ploughing matches were instituted where 'premiums in money, or medals which were struck for the purpose' were awarded, and states that similar competitions were envisaged 'both in the house and the field'. He describes the improvements carried out by the fourth duke in both land tenure and use. The domestic industry was principally flax-spinning, and was of such importance that the rents of tenant farmers were paid 'almost exclusively from the price of the yarn spun by the women during winter'. The medals were exhibited at the Academy in 1791.

(Unpublished. See Sir John Sinclair, *Statistical Account of Scotland*, 21 vols (Edinburgh, 1791-9), XX, 410-92, on the parishes of Dunkeld and Dowally; S. S. Banks, VII, 230).

No. 9.* Lord Effingham, 1791
Obverse: head of Lord Effingham; around, THO. HOWARD. CON. DE. EFFINGHAM. REI. MONET. PRAEF. 1784.; signed below truncation, J. Milton F. (cursive).
Reverse: Britannia seated on globe; at her feet a coin-shower on which can be seen, Milton F/Tower/London/1790; above, PRO PATRIAE.
Edge: NATVS. XIII. JAN. MDCCXLVII. OB. XV. NOV. MDCCXCI. AET. XLIV.
Silver and copper; diameter 35 mm.

Forrer notes two variants of this medal. The date 1790 on the medal suggests that it was at first intended to mark the completion in 1789 of Effingham's term as master of the Mint; and that the edge inscription was added when his death was known.

(Brown, No. 353).

No.10.* Society for the Improvement of Naval Architecture
Obverse: female wearing naval crown, offering wreath; ships of all eras in the background; around, FOR THE IMPROVEMENT OF NAVAL ARCHITECTURE; in exergue, INSTITUTED 1791; signed on exergue line, J. MILTON F.
Reverse: wreath, blank within for inscription.
Gold, silver and copper; diameter 59 mm.

The premiums offered by this society, as published in the *Gentleman's Magazine* (1793, i, 161–2), included medals in gold and silver for research papers on specific problems relating to ship design. Production

of the medal must therefore belong to 1792 or 1793. The society was the creation of John Sewell, bookseller and publisher of the *European Magazine*, and quickly attracted a distinguished membership under the presidency of the young duke of Clarence. It was inspired by fears that we had dropped behind the Continent and America in ship design due to neglecting science; and scientists 'in the universities and elsewhere' were appealed to for support. In spite of some valuable experimental results the society was dissolved about the end of the century. A collection of manuscript notes and minutes made by Sewell during the years 1800–1, now preserved at the National Maritime Museum, tells a heartbreaking story of acrimony, desertions, and shortage of money. Milton was finally a creditor for £30, but was holding some medal stock in gold and silver which may have offset his loss. Sewell's death in 1802 was perhaps hastened by these sad events.

(Unpublished. See A. W. Johns, 'An Account of the Society for the Improvement of Naval Architecture', *Transactions of the Institution of Naval Architects*, 52 (1910), 28–40).

No. 11.* Erskine and Gibbs, 1794
Obverse: jugate heads of Erskine and Gibbs; around, HON. T. ERSKINE. V. GIBBS. ESQ. PATRIOTS WHO FOR SACRED FREEDOM STOOD.; signed below the heads, I.M.F.
Reverse: allegory of Justice reviving British Liberty; around, RETURNING JUSTICE LIFTS ALOFT HER SCALE; in exergue, MDCCXCIV.
Silver and copper; diameter 44 mm.

(Brown, No. 376).

No. 12.* Marischal College, Aberdeen. The Gray Prize Medal, 1795
Obverse: figure of Science with astronomical instruments; around, IPSUM PENETRABILE COELUM; in exergue, MDCCLXXI; signed on exergue line, J.M.F. (cursive).
Reverse: wreath, and within, PRAEMIUM MATHEMATICUM GRAYANUM ACAD. MARISCHAL. ABREDON.
Silver and copper; diameter 51 mm.

By a deed, or 'mortification', dated 1768 John Gray declared his intention of endowing two mathematical bursaries at Marischal College. Bursars who did exceptionally well were to receive a medal of one ounce standard gold. The *Fasti* state that 'in 1795 a die for a medal, and various copies thereof, in gold, silver, and copper, was obtained at an outlay of £98. 18s. 4½d. This medal was awarded in 1795, 1824, and 1825'. John Gray, F.R.S., though resident in London, was appointed Rector of the College in 1764. He died in 1769, and the date 1771 presumably marks the beginning of the bursaries. The examples in gold have not been noticed.

(Cochran-Patrick, p. 161; *Fasti Academiae Mariscallanae Aberdonensis, Selections from the Records*, edited by P. J. Anderson (Aberdeen, 1889), pp. 440–3).

No. 13.* Prince of Wales
Obverse: bust of the prince; around, GEORGIVS. WALLIAE. PRINCEPS.; signed below, J.M.F.
Reverse: the Prince's plumes and motto.
Silver and copper; diameter 32 mm.

Dalton & Hamer placed this piece in Ayrshire presumably by association with the Fullarton Prince of Wales coinage, but there is no connection. Colonel Grant listed the piece as '1795, Prince of Wales, Marriage', but that too is uncertain. It appears to be simply a laudatory medal, and see my remarks on the Winchester medal, No. 16.

(Dalton & Hamer, Ayrshire, No. 1; M. H. Grant, 'British Medals since 1760', *BNJ* 32 (1934–7), 269–93, and 33 (1938–41), 449–80, vol. 32, p. 280).

No. 14.* The Rev. William Romaine, 1795
Obverse: bust of Romaine; around, REV^{D}. W. ROMAINE. M.A.; signed J.M.F. (cursive).
Reverse: figure of Faith; around, THE JUST SHALL LIVE BY HIS FAITH; in exergue, D. JULY. 26. 1795. A. 81.
Silver, copper, white metal; diameter 32 mm.

(Brown, No. 403; Dalton & Hamer, Middlesex, No. 216).

No. 15.* Eradication of Horse Disease, 1795
Obverse: scene of horses being shot; around, THEIR VALUE UPWARDS OF £500; in exergue, TUTAMEN/ VOLUNTARILY DESTROY'D/BY D. COLGATE OF/ORPINGTON/KENT/1795; signed on exergue line, J M (cursive).
Reverse: around, A MARK OF RESPECT TO THE R^{T} HON. T. SKINNER. S^{R} R. GLODE K^{T} & M^{R} W.

AUSTIN; within, WE.ALSO.ARE.BUT/AS.YESTERDAY.OUR/DAYS.A.SHADOW./HE.TAKETH.AWAY./WHO.CAN.HINDER?/MAN.(ALSO) GIVETH/UP.THE GHOST.AND/WHERE.IS.HE?/JOB.
Silver and copper; diameter 32 mm.

The story of this medal, as given by Milton to Miss Banks, is quoted by Brown: 'Mr Colgate, a farmer, voluntarily destroyed his horses that were well, and those that had a new infectious distemper, to prevent its spreading; which caution had the desired effect. The Lord Mayor and Sheriffs at their own expense reimbursed him. Mr Colgate then at his own expense had this medal made, and had one hundred of them'.

(Brown, No. 408; Dalton & Hamer, Kent, No. 2; S. S. Banks, VII, 227).

No. 16.* Winchester College Prize Medal, 1797
Obverse: bust of William of Wykeham; around, WILHELMUS DE WYKEHAM; signed on truncation, J MILTON F.
Reverse: Prince of Wales's plumes and motto; around, HONOREM PRINCEPS PROPONIT.
Gold, silver and copper; diameter 48 mm.

This medal was first given in July 1797 at the Winchester prize-giving ceremony, two in gold and two in silver. *The Hampshire Chronicle*, as quoted by Chitty, stated that they were 'given then for the first time by H.R.H. the Prince of Wales', to whom a set of English verses had been sent by the scholars 'in acknowledgement of the honour conferred on them by his patronage'. The medals were executed with the greatest taste and elegance, said the newspaper.

What or who prevailed on the Prince to undertake this sponsorship is not known, but there was a gap to fill since the previous donor, the first earl of Ailesbury, had abruptly terminated his sponsorship when Dr Warton resigned as headmaster in 1793. The Ailesbury medals had originally been engraved by Richard Yeo in 1761. The statement that Milton was medallist to the Prince of Wales appeared first in Redgrave's *Dictionary of Artists* in 1874. If so the appointment could well have followed from the Winchester medal; and it is possible that the Prince of Wales medal, No. 13, was a grateful tribute.

(Brown, No. 931; Grimshaw, p. 10, No. 13; H. Chitty, *Medal-Speaking at Winchester College, 1761–1815* (Winchester, 1905), pp. 6, 25–6).

No. 17.* Naval Thanksgiving at St Paul's, 1797
A. *Obverse*: head of George III; around, GEORGIVS. III. DEI. GRATIA.; signed below, MILTON.
Reverse: regalia on plinth, on which is inscribed HOWE/ST VINCENT/DUNCAN; around, ROYAL THANKSGIVING AT ST PAULS; below, DEC. 19. 1797; signed on plinth, Milton (cursive).
Silver, copper, white metal; diameter 32 mm. Two variants of the reverse exist, differing in small details.
B. *Obverse*: as A.
Reverse. facade of the Guildhall; around, GUILDHALL LONDON.
Silver and copper.

(Brown, Nos. 439–40; Dalton & Hamer, Middlesex, Nos. 192–4).

No. 18.* Minorca Magistrates, 1798
Obverse: head of George III; around, GEORGIVS. III. REX.; signed below head, MILTON F.
Reverse: figure of Justice, with ship and fort in the distance; above, SALUS POPULI; in exergue, 15. NOV. 1798 (absent from some examples).
Copper; diameter 51 mm

The association of this medal with Minorca is apparently due to a catalogue note by Miss Banks: 'Medal given by the Magistrates in Minorca 15 Nov 1798'.

(Brown, No. 461; S. S. Banks, VII, 225).

No. 19.* Royal Carmarthenshire Militia, 1798
Obverse: the royal arms; around, KING. AND. CONSTITUTION.
Reverse: harp with Prince of Wales's plumes above; around, ROYAL. CARMARTHENSHIRE. MILITIA. 1798; signed below, MILTON. F.
Silver, copper, white metal; diameter 39 mm.

(D. Hastings Irwin, *War Medals and Decorations*, fourth edition (London, 1910), p. 308).

No. 20.* Anthony Storer, 1799
Obverse: head of Storer; around, ANTHONY MORRIS STORER ESQ. 1799; signed below, J MILTON F.
Reverse: scene of a waggoner following his cart; above, DOCTUS ITER MELIUS; in exergue, PURLEY.
Silver and copper; 35 mm.

Anthony Storer, politician and collector, died in 1799, and this was perhaps a memorial medal. Purley Park, near Reading, was his home. The significance of the reverse is not clear to this writer.

(Brown, No. 472).

No. 21.* Samuel Tyssen, 1800
Obverse: head of Tyssen; around, SAMUEL. TYSSEN. ARM. A.S.S.; signed below, MILTON SC. AD VIVUM.
Reverse: wreath; within (continued from obverse), DE/NARBOROUGH HALL/IN/AGRO NORFOLCIENSI /EFFIGIAVIT/AMICA MANUS/JOAN. MILTON/MDCCC.
Silver, copper, white metal; diameter 41 mm.

Tyssen died in October 1800, and the sale of his great coin collection took place in 1802, where Milton was a modest buyer. This is the only known instance where Milton took a likeness himself. The inscription indicates the friendly terms between Tyssen and Milton, and dates the portrait to 1800. Indeed the rather gaunt appearance of the sitter suggests his last days. Milton exhibited a proof from the portrait die at the Academy in 1802, and the medal may have been ready in that year.

(Brown, No. 491).

No. 22.* Rumford Medal of the Royal Society, 1802
Obverse: tripod with flame; around, NOSCERE QUAE VIS ET CAUSSA; signed on exergue line, J. MILTON F.
Reverse: wreath; within, PRAEMIUM/OPTIME MERENTI/EX INSTITUTO/BENJ. A RUMFORD/S.R.I. COMITIS/ADJUDICATUM/A/REG. SOC. LOND.
Gold, silver, copper; diameter 76 mm.

The handsome endowment by Benjamin Thompson, Count Rumford, of £1,000 in the three per cents was to provide biennially a gold and a silver medal together worth £60. This explains the very exceptional size of three inches for the medal. Rumford made his first proposal to the Royal Society in 1796, and a resolution of the society in April 1799 set the affair in motion, and nominated Milton to engrave the dies for the sum of £105. The medal was first struck in 1802, and Rumford himself was the first recipient 'for his various discoveries on the subject of heat and light'.

(C. R. Weld, *A History of the Royal Society*, 2 vols (London, 1848), II, 213-21).

No. 23.* Gwyneddigion Society of London, 1801
Obverse: Hu, the Welsh hero, stepping out of coracle; around, HU GADARN YN ARWAIN Y CWMRY I YNYS PRYDAIN ('Hu the mighty conducting the Welsh nation to the isle of Britain'); signed J MILTON F.
Reverse: blank die, but personally engraved for each recipient.
Silver and copper; diameter 50 mm. Location, Welsh Folk Museum.

The example illustrated in Peate was the first of these medals to be presented, and was awarded in 1801 to the Rev. Walter Davies (1761-1849), a renowned Welsh bard and scholar. The reverse inscription translates: 'Presented by the Gwyneddigion Society of London to the Rev. Walter Davies for his ode on the progress of learning in the eighteenth century. 1801'. In fact the medal must have followed later, for a note by Miss Banks dated 1803 states that Milton was then working on the medal, and that 'a Clergyman is to have the first . . .'. The obverse die was still in use when Leathart wrote in 1831.

(Iorwerth C. Peate, *Welsh Society and Eisteddfod Medals and Relics* (Cardiff, 1938), No. 19, and Plate I. See also W. D. Leathart, *Origin and Progress of the Gwyneddigion Society of London* (London, 1831), p. 33).

No. 24.* Board of Agriculture Medal, 1802
Obverse: head of the duke of Bedford; around, FRANCISC. DUX BEDFORDIE AGRICOLAR. FACILE PRINCEPS; signed below head, J MILTON F.
Reverse: female figure reclining and clasping a funerary urn; above, BONI LUGENT IMMATURE ADEMTUM; in exergue, AGRICOLARUM COETUS/CONSULTO.
Silver, diameter 41 mm.

The fifth duke of Bedford died in March 1802, and this commemorative medal was commissioned by the Board of Agriculture. As previously mentioned, Milton was recommended to the Board by Banks. That the medal was designed by John Flaxman is known from his account book. His bill for eight guineas was addressed to Banks in October 1803 for 'Model of face and reverse of the Duke of Bedford's medal'. It is true that Flaxman's description would equally well fit the Bath and West medal (No. 25), but Croft-Murray equated it to the present medal on stylistic grounds, and our knowledge of Banks's concern with this medal seems to clinch the matter.

(Brown, No. 533; E. Croft-Murray, 'An Account Book of John Flaxman, R.A.', *Walpole Society*, 28 (1939-40), 51-94 (p. 80).

No. 25.* Bath and West of England Society, 1802
Obverse: head of the duke of Bedford; around, FRANCIS DUKE OF BEDFORD PRESIDENT 1802; signed below head, J MILTON F.

Reverse: allegorical group with Britannia awarding prizes for various livestock; in exergue, BATH AND WEST OF ENGLAND SOCIETY.
Silver and pewter; diameter 59 mm.

The portrait on this medal is similar to the last, and clearly derives from the same bust or model that Flaxman had followed. The medal is referred to in 1808 as the Bedfordean Gold Medal, but no example in gold has been noticed.

(Brown, No. 547; *Rules, Orders and Premiums of the Bath and West of England Society*, printed by R. Cruttwell (Bath, 1808), p. 56).

COINAGE

No. 26.* Anglesey Pattern Penny, 1786
Obverse: Druid's head within oak wreath.
Reverse: monogram PMC°; around, WE PROMISE TO PAY THE BEARER ON DEMAND ONE PENNY.
Edge: EDW. HUGHES . THO. WILLIAMS . IOHN DAWES . PARIS . LODGE .
Copper; diameter 30 mm; undated and unsigned.

That Milton engraved this piece was well known, and was confirmed by Pye, who also stated that it was struck, in limited numbers, by Westwood of Birmingham. It was recognized as the first of the Anglesey coins, or rather patterns, and indeed the first production of the new token era, and on that account given the prior position in Pye's 1801 edition. The piece was listed in the Tyssen sale catalogue of 1802 (lot 72) as: 'The first Penny Piece struck by the Anglesey Copper Company, in 1786 (no date) – engraved in London by John Milton'. This description has a deliberate and authentic ring and, if correct, dates the production to 1786, the year before Milton joined the Mint.

Milton's pattern was not adopted, and it was Hancock of Birmingham who produced the approved pattern (Dalton & Hamer, Anglesey, No. 4), and who was entrusted with making the dies for the first bulk issues of the coinage in 1787. Either Hancock's pattern was thought superior, or he was better placed to handle the larger undertaking. In that year Thomas Williams, the dynamic director of the Parys Mines Company, was pursuing his ambition to become the major producer of copper coin, and was in keen competition with Matthew Boulton to obtain a national contract from the government. He did not find Hancock altogether reliable or adequate, and in the summer of 1787 was himself in Paris trying to engage the Swiss engraver, J-P Droz; but failed, as we know, to outbid Boulton.[27] By 1788 Williams was evidently resigned to collaborating rather than competing with Boulton in the field of coin production. In a letter to Boulton in April 1788 he wrote: 'enclosed I send you one of Hancock's new halfpence. The engraving is far inferior to yours though not to any of our Tower Productions, and I believe Hancock may mend his hand . . . Suppose you call on Hancock. Show him your piece and tell him to try and improve by it'. What had evidently happened was that one of Droz's pattern Britannia halfpennies had recently reached Boulton from Paris, and been shown to Williams, who was feeling some envy, and further worries about Hancock.[28] Whether the allusion to 'Tower Productions' had any reference to Milton's pattern, or merely to the circulating copper coinage, is unclear; but Milton was evidently no longer in the running.

The origin of the Druid's head on the Anglesey coinage has long been the subject of speculation, but has now been satisfactorily elucidated by Mr G. C. Boon in his forthcoming article on the medals of the Anglesey Druidical Society, which he has kindly allowed me to cite in advance of publication.[29] He has identified the sources for the different heads on the medals and the coinage, and it now seems certain that the inspiration, though not the precise types, for the coinage design must have derived from the medals of the society.

According to Dalton and Hamer the preparation of drawings for Hancock to work from, and probably for Milton as well, was undertaken by a Mr Collins of Maize Hill, Greenwich. This slender morsel of information derived from a note made by the token-collector, the Rev. W. R. Hay, following his visit to Birmingham in 1796, and a conversation that he had there with Hancock's former apprentice, Jorden.[30] Tenuous though this thread might seem, it can nevertheless be given serious attention, and is perhaps more revealing than at first appears. A good deal is known about William Collins, who was a successful inventor, and a skilful amateur portraitist among other things. He and John Westwood, coppersmith, mintmaster, and former medallist, had performed valuable services for Williams in the copper trade, and it would not be surprising if Williams turned to the same team again when he wished to develop his coinage,

[27] J. R. Harris, *The Copper King* (Liverpool, 1964), pp. 72–5; MBP, Birmingham, Pradeaux to Boulton, 14 June, 28 June, and 9 July 1787. According to Pradeaux Droz was invited to engrave a die for the Anglesey coinage. On Droz's work for Boulton see J. G. Pollard, 'Matthew Boulton and J-P Droz', *NC* (1968), 241–65.

[28] MBP, Birmingham, T. Williams box, Williams to Boulton, 5 April 1788; J. G. Pollard, pp. 256–7.

[29] To appear in *Archaeologia Cambrensis*, 1983 (1984).

[30] Dalton & Hamer, Part XI, p. x; but derived from S. H. Hamer's article 'Notes on some interesting Token Books and their Original Owner', *NCirc* (1903), cols 6048–56 (cols 6053–5).

for between them they had all the requisite facilities and skills.[31] Their instructions perhaps were to find the best engravers in the land, and an approach to the Mint would have been part of that quest. If the conjecture that Westwood and Collins were invited to set the coinage in motion is correct, then our information from Hay and Pye that Milton's piece was designed by Collins and struck by Westwood becomes highly believable.

(Pye, Plate 1, No. 1; Dalton & Hamer, Part XI, pp. x and 329, Nos. 1 and 2).

No. 27. Barbados Pennies, 1788 and 1792, and Halfpenny, 1792

A.* *Obverse*: head of negro wearing Prince of Wales plumes; below, I SERVE.
Reverse: pineapple; around, BARBADOES . PENNY . 1788 .

B.* *Obverse*: similar design to A; signed M on truncation.
Reverse: the king, as Neptune, in car drawn by sea horses; above, BARBADOES PENNY; in exergue, 1792.

C. Halfpenny, similar to B.

The complex problems of this coinage, and of the secondary issues by makers in Birmingham, were completely worked out, it appears, by Pridmore and D. Vice. Milton's own detailed account of the issues for which he was responsible, with dates, mintages, and name of client, was given in an important footnote by Ruding. As it happens the slip from which Ruding took the note is preserved among his papers, and is headed: 'Extract from a List of his works furnished by the late Mr Milton to Mr Miles'. To us it is interesting to learn that Richard Miles had such a list, but sad that Ruding did not, or it might have survived. The only details not reproduced by Ruding include the note that the 1788 dies cost ten guineas, and the remarks which merely confirm what we know, '1788, the proofs have a different reverse – both pines', and '1792, the dies for the above are different from the first both head and reverse'.

(Sharp, p. 242; Ruding, Annals, II, 404 and note; F. Pridmore, *The Coins of the British Commonwealth of Nations*, Part 3, *British West Indies* (London, 1965), pp. 82–8; D. Vice, 'The Barbados "Pineapple" Penny of 1788', *NCirc* (1977), 485–87; BL, Ruding Papers, Additional MS 18,085, fol. 156).

No. 28.* Milton's Pattern Shilling, 1798

Obverse: head of George III; around, GEORGIVS. III. DEI. GRATIA. REX.; below, 1798.
Reverse: large shield in six divisions; around, M.B.F.ET.H.REX.F.D.B.ET.L.D.S.R.I.A.T.ET.E.
Silver and copper; diameter 25 mm; unsigned.

Opinion has varied in the past about whether to describe this piece as a pattern shilling or a pattern guinea. It was listed as a pattern shilling by Crowther and by Seaby and Rayner. The Royal Mint have examples in silver and copper which they acquired with the Banks gift of 1818, and which were catalogued at that time as pattern shillings by Milton. The British Museum have examples in silver and copper, together with a pair of impressions in tin showing a variant obverse inscription, GEORGIVS TERTIUS D.G. REX., all from the Banks collection. An entry in Miss Banks's manuscript catalogue reads 'a pattern shilling, by Mr Milton'. We have here Miss Banks's authority that it is not incorrect to regard the coin as a pattern shilling, and our safest course is to adhere to that description. However the design of the coin with its large single shield is certainly reminiscent of a guinea, and it was listed as early as 1802 in the Tyssen sale catalogue (lot 428) as a 'pattern for a guinea, by Milton'. The guinea argument appears to have some force, and possibly there was a change of intention on Milton's part making both views more or less tenable.

The dies for this coin are in the Mint collection, as noted by Hocking. It does not follow, however, that the Mint were in any way concerned with the coin or its production in 1798. They almost certainly were not, for Milton had left them in March 1797. Mr G. P. Dyer observes that no mention of the dies can be found in the Mint records before 1845, and the probability is that they were acquired after, or even long after, Milton's death.[32]

The most obvious explanation of the origin of the coin is that it was Milton's response to the appeal of the Privy Council Coin Committee in 1798 for new ideas in coinage design.[33] It was exactly the kind of thing they wanted to see; it could have been a little victory for Milton; and we can be sure that he could

[31] A well-informed obituary of William Collins (c.1751–1819) appeared in the *Gentleman's Magazine* (1819, i, 582–83), whose editor knew Collins personally. On John Westwood, see Forrer, VI, 458–9. On Westwood and Collins as a team, and their patent copper bolts for the navy, see J. R. Harris, pp. 48–9.

[32] The dies bear no distinguishing marks, and are typical of the shouldered kind in use at the Mint at that period for proof and pattern pieces. See G. P. Dyer and P. P. Gaspar, 'The Striking of Proof and Pattern Coins in the Eighteenth Century', *BNJ* 50 (1980), 117–27. Milton was simply following his Mint training as we would expect. These are the only surviving Milton dies that I am aware of. I am much indebted to Mr G. P. Dyer of the Royal Mint for his general observations on the Milton coin, and for examining the records and dies in question.

[33] Craig, *The Mint*, p. 269.

have counted on the support of Sir Joseph Banks, who was one of the most important members of the committee. However no evidence has been found that the coin was ever submitted.

Mr Dyer states that the obverse die shows visible traces where Milton imperfectly altered the inscription from TERTIUS D.G. to DEI. GRATIA, and the underlying inscription can be faintly made out on the coins in the Mint collection. Thus the impression at the British Museum is accounted for as an early state, and there is no need to assume that more than one die existed. But, if so, the ghost inscription may well be detectable on all examples. There is no obvious reason for the alteration unless to remove the unhappy mixture of the Latin U and V.

(G. F. Crowther, *A Guide to English Pattern Coins* (London, 1886), p. 41; H. A. Seaby and P. A. Rayner, *The English Silver Coinage from 1649* (London, 1957), Nos. 1243 and 1244; W. J. Hocking, *Catalogue of the Coins, Tokens, Medals, Dies, and Seals in the Museum of the Royal Mint*, 2 vols (London, 1906 and 1910), I, 165, Nos. 1810 and 1811, and II, 31, Nos. 504 and 505).

No. 29.* Fullarton's Wallace Token, 1797

Obverse: bust of Wallace; around, GULIELMUS VALLAS.

Reverse: seated female representing Scotland; above, SCOTIA REDIVIVA; in exergue, 1797, divided by the monogram T C; signed on exergue line, M.

Silver and copper; diameter 28 mm.

This token was undoubtedly intended to serve the enterprise with which Colonel William Fullarton was closely involved, known as the Troon Canal Company. Its objects were the construction of a canal from Kilmarnock to Troon on the Ayrshire coast, and the modernization of the harbour facilities at Troon.[34] Fullarton was intimately concerned in the scheme since Troon was part of his family estate, but the dominant interest must certainly have been that of the coalowners at Kilmarnock who sought to get their coal down to the coast and away by ship. As M.P. for Ayrshire, apart from his personal interest, Fullarton had the task of steering the Troon Canal Bill through Parliament during the summer of 1797; and it is likely that this token was used as a publicity piece for distribution to M.P.s and the like. The mintage of 576 recorded by Pye seems quite suitable for such a purpose. The monogram T C, which has been interpreted in many different ways in the past, is most likely to stand for the Troon Company, the simplified name used by Fullarton himself. In fact the Bill went to the Lords in July 1797, but failed to pass. However, planning continued and we must assume that they intended to bring it in again at a later date.

(Pye, IV, 7; Sharp, p. 219; Dalton & Hamer, Part XII, p. ii, and Ayrshire, No. 3).

No. 30.* Fullarton's Adam Smith Token, 1799

Obverse: head, 'in the antique manner', short curled hair and bare shoulder; uninscribed.

Reverse: female seated in the classical posture of mourning defeat, with ancient weaponry behind her; signed J. MILTON F.; otherwise uninscribed.

Silver and copper; 25 mm.

In spite of the lack of inscription some interpretation of this piece is possible. We can be fairly confident that it is the piece referred to by Fullarton in his letter of January 1799 to Matthew Young of which the full text is given under the next item. If so the unfinished condition is accounted for by Fullarton's dropping it in favour of his proposed silver coinage; and we can give it the nominal date 1799. Pye, from whom the association with Fullarton is first known, stated that only 'a few proofs' were made.[35] Sharp was the first to identify the portrait as Dr Adam Smith, an appropriate Scottish hero; and a comparison with Tassie's portraits of Smith confirms the equation without doubt. On the other hand the reverse design seems inappropriate, and out of tune with the theme of Scotia Rediviva on the Wallace token. To add to the mystery, the design appears to have been copied (but mirrored in the way of engravers) from Kirk's memorial medal of 1774 to the duke of Atholl (Brown, No. 192).

(Pye, IV, 8; Sharp, p. 219; Dalton & Hamer, Ayrshire, No. 7).

No. 31. Fullarton's Pattern Coins, 1799

A.* Half-crown

Obverse: bust of the Prince of Wales; around, GEORGIVS . P . S . S . C . D . 1799; signed below bust, Milton (cursive).

Reverse: British arms on four shields crosswise; around, BR.L.PR.E REG.SC.PR ET.SEN COR.DUX.

B.* Shilling. Similar to A, but the obverse inscription inserts the letter G between GEORGIVS and P; and the reverse inscription reads REGNI SCOTIAE SENES CALLUS; signed Milton F.

[34] The project was already active in 1794, as we know from Fullarton's *General View of the Agriculture of the County of Ayr* (Edinburgh, 1794), p. 88, prepared for the Board of Agriculture.

[35] Plate 4 in Pye's 1801 edition is found in two versions, one with and the other without this piece. Some copies of Pye have both plates.

C. Sixpence. Similar to A; signed M.
D. Halfpenny. Similar to A; signed Milton F.

The dies for this coinage were prepared by Milton under the direction of Matthew Young, but progress was stopped when the legality of the coinage came into question. A few proofs in copper or 'soft metal' were made at the time, according to Sharp; while Davis describes the re-strikes made somewhat later by Young, and considerably later by W. J. Taylor, in a variety of metals. The story of Sir Joseph Banks's intervention in the affair is briefly told by Sharp, but can be extensively augmented, and to some degree corrected, by reference to surviving documents. There has been some uncertainty about what Fullarton intended, and even about the denominations that he had in mind, for these are not indicated on the pieces themselves. It will be worthwhile, therefore, to give in full his letter of instructions to Matthew Young in January 1799:

> I received your Specimens in due course, and would have written to you concerning them, but since my arrival here [Ayrshire] a better arrangement has taken place. On behalf of the Company which I mentioned to you I applied through the proper Official Channels to His Royal Highness the Prince of Wales for leave to impress Engravings of the Profile Arms and Emblems on such Coin as the Company in question may have occasion to circulate.[36] The Lord Warden of the Stanneries and Duchy of Cornwall has officially informed me that my request will be complied with, provided the transaction is of sufficient extent to render it an object to the Parties concerned. In consequence I have informed the Lord Warden that on my return to London, I shall lay before him specimens for the approbation of His Royal Highness. You know that the Prince of Wales is not only Duke of Cornwall, but High Steward or Senescallus of Scotland, and in these capacities entitled to grant the Privilege solicited. I desire that you will take the trouble to get Mr Milton without delay to execute a die for a Shilling Coin – on one side, the Head of the Prince of Wales, and round the Head, these words, Georgius G.P.S.S.C.D. – 1799.[37] On the other side, Engravings of the Arms, and the Emblems of the Prince of Wales, in four compartments, such as those of the Mint Shillings of George 2nd or George 3rd, taking particular care that nothing be engraved which can interfere with the Arms and Emblems of His Majesty; at the same time rendering the Profile Arms and Emblems of the Prince of Wales as much as possible compleat and proper to pass in currency. Round the emblems there should be letters expressing: Regni Scotiae Senescallus. And in the interval between the compartments of Emblems four coronets or other emblems of the Prince. But of all this, you and Mr Milton are the best judges, and will I am confident execute it speedily and well. I shall be in London by the 23rd January and shall hope soon after to have the Die delivered to me. As there will be others required for Half Crowns, Sixpences and Halfpence, you will take particular care not to mention anything of this matter to anyone except Mr Milton, and request them to keep it perfectly secret till all is ready for issuing.[38]

The legality of coining silver for any private purpose was at that time in doubt, while the contradictory instruction to make the shilling reverse look like the regal coin without resembling it must have been highly alarming to Milton. As a result a discreet word passed between Young and Miss Banks, and the sequel is described in a memorandum by Banks on his copy of Fullarton's letter:

> On Thursday morning, February 7th, Mr Young, to whom this letter is addressed, sold to my sister a Two Guinea piece of Geo. 3rd., for 5 guineas; and he then informed her of this transaction. The same evening I desired Milton to call upon me on the succeeding morning, and got from him this letter and the coin. He told me that he had heard Colonel Fullarton had lately been in Ireland, and on his return had written to Young to say that he supposed the circulation of his money would be much greater than he had originally supposed, and desired to know whether a person could be found to contract for a large quantity of silver. I take the Canal to be that from Troon Point to Ricarton, with the harbour of Troon in the Shire of Ayr, which passed in 1796 or 1797.[39]

Banks now assumed control of affairs, and advised Milton to do no more. In his letter to Milton of 11 February Banks congratulated him on being well out of a dangerous business. He expressed the main objection as he saw it, that 'coining in gold or silver I find is considered by the common law of England as a special prerogative of the Crown; and any subject therefore who coins, or who is accessory to coining, in those metals, is guilty of one of the highest misdemeanours . . .'. Showing a nice concern for Milton's welfare he added: 'I am sorry this will prevent you from undertaking what would have been a profitable employment to you; but I conclude the Company must have Copper Tokens, as they cannot have silver coins, and that you will be employed in engraving them'. He mentioned that he was always available about ten o'clock any morning.[40]

The subsequent correspondence between Banks and Fullarton over the legality of the proposed coinage is of considerable interest, but too extensive to follow here.[41] However the counsel's opinion that Fullarton

[36] PRO, BT6/118, pp. 196–7, Fullarton to T. Tyrwhitt, the Prince's private secretary, 11 December 1798, and p. 198, Fullarton to the lord warden of the Stannaries, 5 January 1799.

[37] These instructions were followed on the shilling, where the G appeared after Georgius, but not on the other coins. Was it an error? Boyne suggested that the G was Galliae, but Gallia is doubtful for Wales. Gwalia may be possible, Wallia is usual.

[38] Two versions of this letter of 10 January 1799 exist. They differ slightly, and both are copies. PRO, BT6/118, pp. 194–5, and BM(NH), DTC, XI, 160–2.

[39] BM(NH), DTC, XI, 162.

[40] BM(NH), DTC, XI, 194, Banks to Milton, 11 February 1799.

[41] BM(NH), DTC, XI. Fullarton to Banks, pp. 207–8, 28 April; p. 218, 20 May; pp. 237–8, 4 July 1799. Banks to Fullarton, pp. 209–10, 2 May; pp. 221–22, 24 May 1799.

obtained from the eminent lawyer, Sir William Grant, and which he sent to Banks, is to the point. The only reservation that Grant had to make was that 'the possession of the implements of coinage' would need a license from the Treasury, by 8 & 9 William III c. 26. This could, it is true, have been a serious obstacle, but was far from Banks's notion of royal prerogatives. Banks sent a copy to Lord Liverpool, who in his reply expressed both abhorrence and his dissent from Grant's tolerant opinion, but admitted with regret that the attorney-general inclined to an even more lenient view that 'anyone may issue coins, even of silver, provided they call them tokens, and that they do not exhibit any imitations or resemblances of his Majesty's current coin'. In Liverpool's opinion it would, 'if practised to a considerable extent, be the cause of infinite frauds and confusion in the money of the Kingdom'.[42] In face of this powerful opposition from the dominant members of the Coin Committee Fullarton would have been rash to proceed; but in due time the opinion of the attorney-general prevailed, and early in the next century large numbers of silver tokens were issued, though almost invariably with the precaution of putting the word 'token' on them. It is interesting to see that, contrary to the traditional account of this affair, the central issue was not the resemblance to the coin of the realm, an objection that could easily have been circumvented by a change of design, but the whole question of private coining in silver, to which Banks and Liverpool were unalterably opposed.

The coinage never went ahead, but then nor did the Troon enterprize itself, and there must have been other factors of which we are unaware that brought the whole venture to a halt.[43] The last we hear of the dies is in July 1799, when Fullarton informed Banks that he was getting Milton to finish the engravings 'provided he keeps them in his own possession'.[44] The existence of the later dies would otherwise have been difficult to account for.

(Sharp, p. 219; W. Boyne, *The Silver Tokens of Great Britain and Ireland* (London, 1866), p. 24; W. J. Davis, *The Nineteenth Century Token Coinage* (London, 1904), pp. 199–200; Dalton & Hamer, Part XII, p. iii, and Ayrshire, No. 5; L. V. Larsen, 'The Fullarton Token Patterns', *SCMB* 1966, pp. 154–7).

No. 32. Danish Pattern Coins, 1799; 1, $\frac{2}{3}$, and $\frac{1}{3}$ Speciedaler

A.* *Obverse*: head of Christian VII; around, CHRISTIANUS. VII. D.G. DAN. NORV. V.G. REX; signed below head, M.
Reverse: Danish arms; across, 1. SP.; around, 60. SCHILLING. SCHLESW. HOLST. COURANT. 17 MF 99.
Silver.

B. Similar to A, but 40 schilling, and $\frac{2}{3}$ SP.

C. Similar to A, but 20 schilling, and $\frac{1}{3}$ SP.; unsigned.
Location; National Museum, Copenhagen.

The invitation to Milton to engrave dies for the Danish coinage was transmitted to him by one Ole Warberg, then resident in this country and acting for the Danish Treasury. Among other things he was conducting the negotiations with Boulton for the supply of mint machinery to Denmark as part of the Danish plans for modernizing their minting methods and coinage. Milton being sensitive as to the legal implications in making dies and taking off silver proofs for foreign coinage without proper authority appealed to Banks, and it is from Banks's formal application in March 1799 to the Coin Committee for a special licence that we know of this transaction.[45] As Banks stated it, Milton had been requested 'to prepare dies and puncheons for striking of coins intended for circulation in the dominions of his Danish Majesty'. The patterns exist, and are illustrated by Wilcke, but never went into circulation. Copies of them were made later by Küchler on standard Boulton dies for use with the Boulton plant which finally reached Copenhagen in the late summer of 1806.

It was also Warberg, a 'very sensible, amiable, and scientific gentleman' as Boulton described him, who arranged for the Danish engraver, G. V. Bauert, to visit London and train under Milton in the engraving and preparation of coinage dies. The visit lasted from August 1799 to September 1800, and the fee paid for the year was £200. Judging from the exchange of letters between Milton and the Danish Treasury on completion of the training period, it was highly successful.[46]

(J. Wilcke, *Specie-, Kurant- og Rigsbankdaler, 1788–1845* (Copenhagen, 1929), pp. 98–108; MBP, Birmingham, Danish Mint box).

[42] Grant's opinion, BM(NH), DTC, XI, 229–30. Another copy, sent by Banks to Liverpool, 25 May 1799, is BL, Additional MS 38424, fols 64–8. Liverpool to Banks, 26 May 1799, DTC, XI, 227–8.

[43] A railway was eventually built instead of a canal. See R. N. P. Hawkins, 'Two Colliery Tickets of Ayrshire', *NCirc* 1973, pp. 380–2.

[44] BM(NH), DTC, XI, 237–8, 4 July 1799.

[45] BM(NH), DTC, XI, 199–201, Banks to Privy Council, 10 March 1799; also pp. 202, 206; and minute of the Coin Committee, PRO, BT6/127, pp. 208–9.

[46] Copenhagen, RA, Finanskollegiet, Journalsager 1800, No. 1782, 2 and 20 September (1800). The Milton/Bauert agreement, and several of Bauert's letters to the Danish Treasury, are also preserved, for copies of which I am much indebted to Mr N. Rasmussen of the Danish Royal Mint.

TOKENS

The pieces listed in this section are those included by R. C. Bell in his *Tradesmen's Tickets and Private Tokens*, and the references are to that work; the exceptions being No. 41, which appears in his *Commerical Coins, 1787–1804*, and the Fullarton tokens treated in the last section for convenience.[47] All pieces up to No. 44 were engraved in Pye's 1801 edition. The metal is generally copper, though silver and other metals occur.

No. 33. D. A. Rebello, Hackney, 1795
Obverse: a church; around, HACKNEY CHURCH; in exergue, MDCCXC; signed on exergue line, J M.
Reverse: ornamental cypher, D A R; around, HACKNEY PROMISSORY TOKEN 1795.
Halfpenny size (Pye, XXII, 1; Sharp, pp. iv and 58; Dalton & Hamer, Middlesex, 309; Bell, pp. 99–101).

No. 34. J. Rebello, Hackney, 1796
Obverse: a church; around, HACKNEY CHURCH MDCCXC; signed in exergue, J. Milton F (cursive).
Reverse: Time holding a shield inscribed 'David Alves Rebello'; around, MEMORIA IN AETERNA; in exergue, 1796; signed on exergue line, M.
Penny size (Pye, XXII, 2; Sharp, p. 14; D & H, Middlesex, 24; Bell, pp. 101–2).

No. 35. J. Conder, Ipswich, 1795
Obverse: bust of Wolsey; around, CARDINAL WOLSEY BORN AT IPSWICH 1471; signed below bust, M.
Reverse: gateway; above, JA^{S} CONDER . IPSWICH . 1795; in exergue, WOL^{YS} GATE.
Penny size. Variants of both types exist (Pye, XXIV, 5, 6 and 7; Sharp, pp. 25, 26; D & H, Suffolk, 10; Bell, pp. 146–7).

No. 36. J. Conder, Ipswich, 1797
Obverse: view of building; above, TOWN. HALL. IPSH.; in exergue, FORMERLY ST. MILDRED'S CHURCH.
Reverse: ornamental cypher J M C; around, CONDER'S IPSWICH PENNY 1797.
Edge: I PROMISE TO PAY ON DEMAND THE BEARER ONE PENNY.
Penny size. Only the reverse of this unsigned piece was engraved by Milton, according to Pye (Pye, XXIV, 8; Sharp, p. 26; D & H, Suffolk, 13; Bell, pp. 147–8).

No. 37. Richardson, Goodluck & Co. (1), 1795
Obverse: Fortune, blindfold, drawing lottery tickets; around, NOTHING VENTURE NOTHING HAVE; in exergue, 1795.
Reverse: AT THE OFFICES OF/RICHARDSON GOODLUCK & Co/No/12807/THE LAST PRIZE OF/£30000/SHARED/WAS SOLD IN SIXTEENTHS.
Halfpenny size (Pye, XXXIII, 9; Sharp, p. 68; D & H, Middlesex, 467–9; Bell, pp. 102–3).

No. 38. Richardson, Goodluck & Co. (2), 1795
Obverse: Bluecoat boy drawing ticket from lottery wheel; around, NOTHING VENTURE NOTHING HAVE; in exergue, 1795.
Reverse: RICHARDSON GOODLUCK & Co/SOLD/No/12807/THE LAST PRIZE OF/£30000/SHARED/IN/SIXTEENTHS.
Halfpenny size. This and the last piece are unsigned, but were attributed to Milton by Pye (Pye, XXXIII, 10; Sharp, pp. 68–9; D & H, Middlesex, 470–1; Bell, pp. 103–5).

No. 39. R. Biddulph, Hereford (1), 1796
Obverse: bull trampling chain; above, JUNE 3^{D} 1796; in exergue, J MILTON F.
Reverse: apple tree and plough within wreath.
Penny size (Pye, XXII, 9; Sharp, p. 12; D & H, Herefordshire, 1; Bell, p. 29).

No. 40. R. Biddulph, Hereford (2), 1796
Obverse: bull trampling chain; above, HEREFORDSHIRE; in exergue, JUNE 3 1796.
Reverse: apple tree and plough within wreath.
Penny size. Both types are quite distinct from No. 39. This piece is unsigned, but attributed to Milton by Pye (Pye, XXII, 10; Sharp, p. 12; D & H, Herefordshire, 4; Bell, pp. 30–2).

No. 41. Rev. D. Collyer, Wroxham, Norfolk, 1797
Obverse: wheelbarrow; below, MARLE. PIT/TOKEN; around, TO. PAY. WORKMEN. AND. PROMOTE. AGRICULTURE.

[47] R. C. Bell, *Tradesmen's Tickets and Private Tokens 1787–1804* (Newcastle upon Tyne, 1963). (Newcastle upon Tyne, 1966), and *Commercial Coins,*

Reverse: 3/PENCE/PAYABLE/AT/WROXHAM; around, D. COLLYER. PROPRIETOR. 1797.
Threepenny piece; unsigned, but attributed to Milton by Pye (Pye, XLIX, 5; Sharp, pp. 2, 3; D & H, Norfolk, 1; R. C. Bell, *Commercial Coins, 1787–1804*, pp. 138–9).

No. 42.* Matthew Young, London, 1798
Obverse: seated female representing the City of London, with St Paul's beyond; around, CIVITAS LONDINI MDCCXCVIII; signed in exergue, J Milton F (cursive).
Reverse: around, MATTHEW. YOUNG. GOLDSMITH. AND. JEWELLER; within, DEALER. IN/COINS & MEDALS/ANTIENT & MODERN/ Nº 16/LUDGATE. STREET/LONDON.
Edge: PROMISSORY PENNY TOKEN PAYABLE ON DEMAND.
Penny size (Pye, XXXV, 4; Sharp, p. 19; D & H, Middlesex, 41; Bell, pp. 119–21).

No. 43.* John Milton, London, 1800
Obverse: seated female figure of Science.
Reverse: Time holding the winged horse Pegasus; in the background a figure struggles to ascend a rocky crag; in exergue, MILTON. MEDALIST/SEALS. COINS &c./1800.
White metal; penny size.

The few examples of this piece that exist show severe die faults on the reverse, and the design is uncompleted. Pye engraved the piece, but noted that it was 'engraved by Mr Milton's desire from an unfinished impression, and the dies are not yet completed'. His rendering of the reverse shows four small figures in addition to the horse-holder, that is to say three more than we find on the token.[48] The horse-holder has been plausibly called Bellerophon, but Sharp's description is better: 'Time (as described by Mr Young on the authority of the artist) is leading Pegasus in front of the rock; emblematical of flights of the imagination in design, poetry, &c.'. The artistic aspirations were doubtless Milton's own, and it is sad that this ambitious and most attractive piece was never completed. The obverse female figure appears to be a clever adaptation of Sir Joshua Reynold's painting 'Theory' which was then on the Royal Academy ceiling at Somerset House. (Pye, XXXI, 10; Sharp, p. 14; D & H, Middlesex, 36; Bell, pp. 73–4).

No. 44. D. Hood, Cambridge
Obverse: wheatsheaf; around, PEACE PLENTY & LIBERTY.
Reverse: DAVID HOOD/PRINT SELLER/CARVER GILDER &/PICTURE FRAME MAKER/CAMBRIDGE.
Halfpenny size; undated and unsigned, but attributed to Milton by Pye (Pye, XIII, 6; Sharp, p. 37; D & H, Cambridge, 19; Bell, p. 9).

No. 45. R. Orchard, London, 1803
Obverse: bust of Orchard; around, ROBERT ORCHARD No 34 GREEK STREET CORNER OF CHURCH STREET SOHO LONDON; below bust, 1803; signed on truncation, MILTON F.
Reverse: around, GROCER & TEA DEALER WHOLESALE RETAIL & FOR EXPORTATION; within, AND AT/SAWBRIDGEWORTH/HERTS/MANUFACTURER OF/CHOCOLATE & COCOA/ON A NEW AND/IMPROVED PRINCIPLE.
Penny size (Sharp, p. 194; D & H, Middlesex, 38; Bell, pp. 81–2).

No. 46. R. Orchard, London, 1804
Obverse: bust of Orchard; around, ROBERT ORCHARD GROCER & TEA DEALER Nº 34 GREEK ST. CORNER CHURCH ST. SOHO LONDON 1804.
Reverse: corner building; around, ROBERT. ORCHARD. TEA. WAREHOUSE. CORNER OF CHURCH ST. AND. AT SAW BRIDGEWORTH HERTS.
Farthing size; unsigned, but the portrait is presumed to be by Milton from similarity with No. 45 (D & H, Middlesex, 1063; Bell, p. 83).

PASSES OR BADGES

Of the five pieces listed here one is known to have been a pass; the other four are presumed from their appearance to have been passes or badges of membership.

No. 47.* Worshipful Company of Carpenters
Obverse: the shield of the company, showing three compasses; a helmet above; around, sprays of oak and some conifer; below, a banner with HONOUR GOD; signed at the bottom, J. Milton F. (cursive).

[48] A. W. Waters, in his *Notes gleaned from Contemporary Literature respecting the Issues of Eighteenth Century Tokens* (Leamington Spa, 1906), p. 6, mentions the possible existence of a piece dated 1799 and matching Pye's engraving. But the evidence, whatever it may have been, was in Young's annotated copy of Conder, and that was presumably the book acquired by the British Museum and destroyed in the last war (the former, but not the present, 7756.cc 16 in the general catalogue).

Reverse: wreath of laurel; blank within for inscription.
Silver gilt and copper; diameter 48 mm.

W. T. R. Marvin described and discussed this piece in his *Medals of the Masonic Fraternity* (Boston, Mass:, 1880), pp. 196–7. He rightly guessed its nature, and that it was not masonic. The British Museum example was from Miss Banks's collection.

No. 48.*Worshipful Company of Needlemakers
Obverse: Adam and Eve hold between them the company's shield which bears three needles and three crowns; behind, serpent in tree; signed on exergue, J Milton F (cursive).
Reverse: blank for inscription.
Projections at the top and bottom of the disc are ornamented with the coils of a serpent.
Silver and copper; dimensions 66 X 37 mm.

The silver example at the British Museum is inscribed 'Alexander Stuart, Livery, 8th January, 1799'.

No. 49.* Brokers' Pass, 1801
Obverse: the royal arms (as introduced in 1801); signed below, Milton F (cursive).
Reverse: the arms and motto of the City of London; below, a panel for the recipient's name.
Silver and copper; diameter 41 mm.

This piece was issued to members of the Stock Exchange, and to certain other commodity dealers, and was carried as a pass to be shown when required. Milton's piece was in use from 1801 to 1830, and replaced an earlier design that had been used since 1714.
(J. B. Caldecott, 'Brokers' Medals and Stockbrokers' Tokens', *The Stock Exchange Christmas Annual*, compiled by W. A. Morgan (Enfield, 1905–6), pp. 231–41).

No. 50.* 'Fide et Amore'
Obverse: monogram P U; above, banner with FIDE ET AMORE; below, sprays of laurel.
Reverse: two hands seeking unity; above, U C/2537; below, banner with JUNGANTUR IN UNUM; signed on banner, J M F (cursive).
Copper; diameter 40 mm. Private collection.

The origin of this very rare piece is unknown. Very probably it is the item listed by Grant as '1800, Friendly Society, Fide et Amore, Anon'.

No.51.* City of Bristol
Obverse: the royal arms (prior to 1801); signed below, MILTON SCULP.
Reverse: arms of the City of Bristol; below, ribbon blank for recipient's name; signed below shield, W.M SCU.
Silver; diameter 39 mm.

The only example known to me is in the British Museum, where Edward Hawkins's label describes it as 'Bristol Merchant Venturers Society'. Grant listed it as '1790, Bristol Merchant Adventurers, Anon', thus overlooking the signatures, and probably making an intelligent guess at the date. No other evidence on this piece has been found. The Society of Merchant Venturers at Bristol do not know it, and disclaim it as their own. Mr L. V. Grinsell included it in his *Brief Numismatic History of Bristol* (Bristol, 1962), p. 26, but acknowledges that Grant was his only source.[49] The signature on the reverse cannot be explained.

It could well be that this piece is unique. Its close parallel with the London brokers' pass suggests that it could have been intended for a similar use at the Bristol Exchange.

GAMBLING TICKETS

Milton produced a number of gambling tickets for use in gaming houses. They are well represented in Davis & Waters, and need not be listed here. The signatures are variously J M, J M F, or J Milton F (cursive). The date 1792 appears on the Fiuri and Lister pieces.

(Sharp, pp. 256–7; Davis & Waters, pp. 311–14, Nos. 31–4, 56–9, 63–4, and 67, 67a).

EXERCISE PIECES

There exists a group of medals which need only be mentioned here consisting of copies of types from earlier medals by Dassier and others, and engraved either by Milton or by his pupil, Bauert. They were perhaps, as Hawkins suggests, 'done for practice'.

(*Medallic Illustrations*, i, 577, and ii, 456 and 585; Grant's List).

[49] Information kindly given by the Society's archivist, and by Mr L. V. Grinsell.

GEMS AND SEALS

Under this heading Forrer (IV, 85) lists:
A. Eagle tearing a serpent, yellow carnelian.
B. Horse galloping, the background blazoned.
C. Seal of the United States of America (engraved in London; St George fighting the Dragon; legend: LET MERCY BE OUR BOAST, AND SHAME OUR ONLY FEAR; signature: I MILTON F).[50]
D. Comedy holding a shield bearing the inscription: MILTON ENGRAVER, No. 6 QUEEN STRT. GOLDEN SQ.

It is interesting to compare these descriptions with Milton's exhibits at the Academy in 1785 and 1788, as recorded in the Academy catalogues:

> 1785 (sent from 6, Queen Street, Golden Square): a frame containing a steel seal of Comedy, and an impression of an eagle and snake.
> 1788 (sent from The Mint, Tower): frame containing a medal, face, etc., reverse, and a wax impression from a steel seal of a George.

There is sufficient weight of probability in the correspondence between the two descriptions to allow us to recognize items A, C and D among the exhibits, and to date them accordingly. The source of Forrer's more detailed descriptions is a mystery. The objects cannot now be traced, and in any case the wording that Forrer uses suggests a written source rather than his own observation. Could he have used some last remnant of one of Milton's manuscript lists?

A number of impressions of seals 'engraved by Mr Milton', and a few waxes, including one of Samuel Tyssen, were listed in a sale catalogue of 1827 (Sotheby, 23 April); but there was evidently some confusion with the work of Henry Milton, and little can be made of the material.

UNCERTAIN AUTHORSHIP

The Milton sale catalogues of 1805 (Sotheby, 30 May) and 1827 (Sotheby, 23 April) provide a useful check in trying to establish the extent of his work. They include a few pieces not otherwise associated with Milton, but whose presence there would be surprising unless there were some connection. Among these are:

A. Leicestershire Agricultural Society medal
Obverse: Minerva holding staff and wreath, with plough and livestock in the background; around, LEICESTERSHIRE AGRICULTURAL SOCIETY.
Reverse: wreath; within, ADJUDGED.
Copper; diameter 44 mm.
The obverse is typical of Milton's work, and there is little doubt of his authorship. The society was founded in 1788, but no evidence has been found of their having used the medal.

B. St Vincent's Black Corps
Obverse: winged figure with sword subduing a native of the island; around, ST. VINCENTS BLACK CORPS.
Reverse: native soldier with musket; around, BOLD LOYAL OBEDIENT; signed in exergue, H.G. FEC.
The medal is described and illustrated in Gordon (pp. 13–14), who relates it to events on the island of St Vincent in 1795. The signature, H.G., is unknown, but may have been Milton's brother-in-law, Henry Gretton, an engraver, though not known as a medallist.

C. 'Ticket for the New Park'
Obverse: monogram G R, with royal crown above.
Reverse: NEW PARK, and blank for personal name and number.
Whole batches of 'tickets for the New Park' were included in the two sale catalogues, totalling twenty or more. It is here assumed that the piece referred to is Montague Guest, Nos. 745–52, since that was the piece in use in Milton's time. It was issued to approved persons to give them access to Richmond Park. Milton may well have engraved the dies, and was clearly the keeper of the stock, and would have inscribed them with the pass-holder's name and issued them as instructed by the Deputy Ranger.

D. The 1827 catalogue attributed to Milton the Isle of Man copper coinage of 1786. This must be wrong, yet it should be mentioned since the same attribution was made by Sharp, and later by *DNB* and Forrer, and so stands unquestioned to this day. That regal coinage was made at the Mint on a warrant of June

[50] That Milton had received a specific enquiry from or on behalf of some institution in America is not impossible. Yet there are difficulties. Dr A. M. Stahl of the American Numismatic Society points out that St George's associations with the British monarchy were likely to render him unsuitable for any official purpose. The great seal of the United States, with the eagle emblem, had already been adopted and brought into use in 1782. I thank Drs R. Doty and A. M. Stahl for their kind help on this problem.

1785, and completed in March 1786. It is well established that Pingo was responsible for the dies; and Milton, an outsider as he then was, could hardly have played even a minor part in the operation.

PORTRAIT MEDALS OF MILTON'S FAMILY

A. Sarah Gretton, 1796
Uniface: bust of Sarah; around, SARAH GRETTON NATA OB. DEC. 1796.
Lead; diameter 40 mm. Location, British Museum, probably unique.

This is a proof in lead from an unfinished die, and the portrait is too incomplete to be satisfactory. The inscription is scratched in. The piece was described and illustrated by Grueber, who had no idea of the lady's identity. We now know that she was Milton's wife, whom he married in 1786. She was the daughter of Henry Gretton, an engraver in Fenchurch Street, a member of the Goldsmiths' Company, and appointed a bridgemaster of the City shortly before his death in 1784. The medal records Sarah's death in December 1796, an event which is confirmed in the registers of the Tower Chapel where she was buried. It is not easy to understand why her maiden name was used.

(H. A. Grueber, 'English Personal Medals from 1760', *NC*, third series, 11 (1891), 399).

B. Henry Milton, 1823
Obverse: portrait of Henry; above, HENRY MILTON; signed below head, SCIPIO CLINT SC. AD VIVUM.
Reverse: inscription, THIS MEDAL OF HENRY MILTON WAS ENGRAVED BY HIS APPRENTICE SCIPIO CLINT AS A TESTIMONY OF GRATITUDE. 1823.
Copper; diameter 40 mm. Location, British Museum, presumed unique.

The medal is well-finished, and the portrait is thoroughly competent as we would expect from Clint, though he was only eighteen at the time. It is amusing that Clint exhibited an impression from the die at the Academy in 1823 under the concealed name 'Apprentice, S.C.', with the result that the fictitious medallist, S. C. Apprentice, eventually secured for himself an entry in Forrer. Henry was Milton's only son, born at the Tower in 1788, and died unmarried in 1824. Little is known of his work as a seal-engraver.

PLATE 1

1 2 3 4 5 6 7 8 8

PLATE 2


11
10
9
13
14
12
15
16
PRO PATRIA
PREMIUM
MATHEMATICUM
GRAVIANUM
ABREDON
PRINCEPS
HONOREM
PROPONIT
WE ALSO ARE BUT
AS YESTERDAY OUR
DAYS A SHADOW
HE TAKETH AWAY
WHO CAN HINDER?
MAN (ALSO) GIVETH
UP THE GHOST AND
WHERE IS HE?

PLATE 3

17 18 19 20 21 22

PLATE 4


FRANCIS DUKE OF BEDFORD PRESIDENT
1802
NATIONAL WEST OF ENGLAND SOCIETY
ANREG
WALTER DAVIES
1801
GEORGIVS P S S C D 1799
GEORGIVS P S S C D 1799
CALLVS REGNI
BARBADOES PENNY
1788
BARBADOES PENNY
1792
GEORGIVS III D G REX
25
24
23
26
30
31B
31A
27A
29
27B

PLATE 5


28
32A
42
DEALER IN
COINS & MEDALS
ANTIENT & MODERN
No 16
LUDGATE STREET
LONDON
43
47
48
49
50
51

SUPPLEMENT III TO CATALOGUE OF THE ADVERTISEMENT IMITATIONS OF 'SPADE' GUINEAS AND THEIR HALVES (*BNJ* 32 (1963), 34 (1965), and 37 (1968))

R. N. P. HAWKINS

FOR ease of reference, the ranges of serial numbers used up to and including the present Supplement are as follows:

	Guinea size	½-guinea size	Miniature	Unorthodox shape/type
Catalogue nos.				
Original list	1–74	101–130	151	
Supplement I	75–100, 201–204	131–136		
II	205–223	137–143		501–503
III	224–282	144–150, 151A, 152–160		
Obverse die nos.				
Original list	1–45	101–120	151	
Supplement I	46–61	121–124		
II	62–67	125–128		501–503
III	68–88	129–142		
Reverse die nos.				
Original list	1–64	101–126	151	
Supplement I	65–91	127–132		
II	92–100, 201–208	133–137		501–503
III	209–255	138–148		

Thus the items now catalogued amount to 182 'guineas', 160 '½-guineas', one miniature, and three others, altogether 346 items. No doubt more have yet to be discovered. The number of obverse dies accounted for (numerical total of serial nos. and a few suffixed 'a') is considerably less because some were used repetitively – from twice up to 0.6's score of 40 times so far.

Collections cited

ADD

Li	Liverpool Museums
NMW	National Museum of Wales
P	Private collection(s). Used henceforth for any other than the Author's.
T	Transitory – dealers' stock/sale lists.

CORRIGENDA &c.

To the *Catalogue*

page	*Cat. no.*	
BNJ 32		
181–2	21–22	A reported extant specimen has a 27½ mm flan, struck from an obverse die of that diameter but a reverse die of only 24½ mm.
184	37	In the description of O.18, *amend* the first four words and comma to read: '*Standard*, the stop midway from legend to truncation;'
187	56	Examination of further specimens has shown that the date on O.31 has a poorly-formed last figure and reads not 1886 but 1883. To the source *add*: 'Bh; P'. That date correction has to be repeated in the related titling on page 208 and the inferred issue-date near the foot of page 217.
191	74	To the source *add*: 'Bh'.
193	115	To the source *add*: 'Bh (in *silver*)'.
BNJ 34		
150	138	To the source *add*: 'H'.

To *Subjects and Legends*

BNJ 32		
208	55	Millie Edwards has been identified as a dwarf whom 'General Mite' afterwards married, in 1884.
214	72	Further regarding 'Good Old Times' – *Pulleyn's Etymological Compendium* (1853), p. 378, remarked 'It has been supposed by many that this phrase is of uncertain date, and that it has been made use of, as it were, from time immemorial' and then drew attention to Godwin's *History of the Commonwealth* (1824–8) as stating that it first came into use at that period; when a return to the 'good old times' was one of the cautiously oblique utterances on the lips of two-thirds of our nation, wishing for the demolition of Cromwell's government with all the cant and hypocrisy that went with it, and to return to the monarchial system.

ADDENDA

GUINEA SIZE

224	O.68	Variant of O.18 – same head-punch and stop, which the legend slightly expanded nearly touches.
	R.209	E HOLLEY (inwards) curved above, BRIDPORT (outwards) curved below, along rim intervened on each side by a rosette flanked by dots. THE / CHEAP / DRAPER / AND / OUTFITTER (last line bowed) within an inner beaded circle. Bridport Museum; P. 25
225	O.68	*As last.*
	R.–	Blank. H. 25
226	O.69	*Standard.* A large well-proportioned head, rather like that of O.43 but curved longer forehead, long wattle, short throat, pointed truncation. The free end of ribbon curves downwards.
	R.210	Same legend. J.G.REX etc. as in R.63, though all stops mh, around crowned shield. Similar but broader crown, its base a row of fine vertical lines like edge-graining. *Shield*: 14½ × 14. *Harp*: tall, narrow. *Lüneburg*: heavily semé field. *Inesc.*: very broad. H. 25
227	O.69	*As last.*
	R.211	IN MEMORY OF THE GOOD OLD DAYS. / 1768 with mh stop, around crowned shield. *Shield*: 14½ × 14. *Scottish arms*: are in a complete tressure. *Harp*: squat. *Inesc.*: absent. The field of the second and third quarters is horizontally hatched. H. 26

228 O.70 *Standard.* Broad laureated head showing strong personality, shortish thick pointed truncation.

R.212 C.S.REX.F.D.C.M.D.S.T.M.B.I.R.M / .1790. around shield under a very wide crown. *Shield*: 14 X 13. *Scottish arms*: fully tressured. *Lys*: large. *Inesc.*: tiny. *Harp*: large. (First M of legend is assumed – the reported specimen has a hole there.)

Bh. 25

229 O.71 *Standard.* Very similar to O.39 but convex throat, unbarred A's.

R.213 M.B.F.ET.H.REX.G.S.T.ET.L.D.S.R.I.AT.ET.I / .1798. around crowned shield. Tall letters and figures; stops mh. *Crown*: high, squareish. *Shield*: 13 X 12½. *Lys*: large. *Brunswick*: lower lion is plunging. *Inesc.*: rampant animal in large frame of straight lines, sides parallel, which when die is worn resembles spade shape. *Harp*: large, well-drawn.

H. 25

230 As last, but inverted reverse.

H. 25

231 O.72 Variant of 0.38 (see cat. no. 63) – legend slightly shifted, the 'X' of 'XCHNG' now comes over gap between 2nd and 3rd leaves instead of between 1st and 2nd.

R.53 (As for cat. no.63.)

Bh; P. 26

232 O.73 *Standard*; head from same punch as O.38 and last.

R.53 Bh. 25

233 O.74 Within a cusped border, a large monogram of large C L enclosing small further C L with & on stem of this L. Fancy accretions on the letters, and the larger C almost severed by a bite from its middle.

R.214 *Standard*, dated 1791. *Scottish*: instead of tressure, double parallel lines across top and bottom. *Harp*: large (winged?).

Bh: P. 25

234 O.75 . J.SAINSBURY ./ CHIEF DEPOT BLACKFRIARS (inward/outward; tall sanserif; bl internal and mh external stops) around laureated bust to right showing pinched glum expression – sharp nose, heavily drawn eye, slanted lips ajar.

R.215 J.SAINSBURY / SPECIAL / DELICACIES / TABLE / SEVEN SISTERS R^{D} all sanserif; outer lines (inward/outward) at rim, the rest boldly across field; the personal name very large.

P; H. 25

235 O.6 (*See cat. nos. 8–9.*)

R.216 (Two pairs of overlapping horizontal parentheses) TELL YOUR FRIENDS (hole) HALL & PAWSONS TEAS. / ARE THE BEST IN STOCKPORT ★ arranged as outer and inner circle around small crowned shield. *Shield*: 9⅛ X 9½. *Scottish*: no tressure. *Lys*: small. *Lüneburg*: lion reversed.

Bh; H. 25

236 O.6

R.217 F.G MYERS (outwards) *at base*, bl stop / . THE ROTHERHAM & WEST RIDING (inwards) around rim; SUPPLY STORES curved along flanks of crowned smallish shield. *Shield*: 11 X 12. *Lions to right* in English arms and – in lieu of horse – in Westphalian. *Scottish*: no tressure. *Harp*: exaggerated, shaped as horizontal S surmounted by distorted 2.

Bh: H. 25

237 O.6

R.218 DRINK BARNES' PURE INDIAN TEA 2/- PER POUND. / WALTON LIVERPOOL & WREXHAM (sanserif); the first legend starting at 7 o'clock and occupying whole rim, the second curved within it from 7 to 5 o'clock; around crowned shield. *Crown*: narrow-based. *Shield*: 11 X 10. Inescutcheon absent.

P. 26

238 O.6

R.219 CHARLES ARDEN, GROCER, 212 WINDSOR S^{T}., & 238 & 356 MILL S^{T} LIVERPOOL. in very small neat sanserif lettering, around crowned shields. *Shield*: 13 X 14. *Harp*: frame points to centre of shield.

Li. 25

239 O.6
R.220 SAMUEL MAYNE . GROCER.200 WALTON R^{D} LIVERPOOL ⁎ (sanserif) around crowned shield. *Crown*: wide. *Shield*: 13 X 14.
Li. 25

240 O.6
R.221 JOHN MITCHELL, GROCER & PROVISION MERCHANT /.LIVERPOOL //OFFICE & WAREHOUSE 111 G^{T} HOMER STREET // BRANCHES / 129 HEYWORTH S^{T} / 120, 122, 124, & / 169 MILL S^{T} / & / 21 COPPERAS HILL all sanserif, occupying the whole reverse, arranged as three concentric rings and three lines (also '&') straight across centre.
Li. 26

241 O.14 (*See cat. no. 29.*)
R.222 .JOHN SMITH. / 29 WEST DERBY ROAD / LIVERPOOL in large heavy serifed fount, placed around upper and lower rims with the city name slung above the latter. SMITH'S / GOLDEN / TEAPOT inscribed sanserif across within the square body-outline of a teapot facing left in centre field.
Li;P. 25

242 O.6
R.223 WILSON'S TEAS ARE THE BEST .⁎. / 220 MILL S^{T} / 162 WINDSOR S^{T} arranged in thick spread sanserif inner curves flanking crowned shield. *Shield*: 11 X 11. *Harp*: large, very thick-framed, front and back parallel and almost vertical. *Inesc.*: absent.
Li. 25

243 O.42 *See cat. no. 67*; legend in balanced halves flanking the head.
R.224 NEWBY / ENGRAVER In fancy letters curved above small crowned shield, CARDIFF curved below. *Crown*: tiny. *Shield*: 9 X 9. Crude arms, 1. and 4. England (horizontally hatched), 2. Scotland (lion resembling a flying lizard plus annulet for head), 3. Ireland.
NMW; P. 27

244 O.42
R.225 THE VERTICAL FEED MACHINE / IS A.1 / SOLE AGENT / B.HOLMES SKIPTON arranged as upper/lower outer/inner surrounds to a tall narrow 9 X 11½ shield under tiny crown. Arms as in preceding.
P. 25

245 O.42
R.226 ⁎ D. JONES ⁎ / 30 S^{t} JAMES' PLACE at upper rim and arched beneath it; then small tiny-crowned 10 X 8 shield with LIVERPOOL bowed beneath; IS MY HATTER at lower rim. Sanserif, outer lines bold, inner lines in small fount. Arms as in last two.
Li. 26

246 O.76 Variant of O.42 – legend higher, its halves cramped; III touching the wig.
R.227 KENT'S MY HATTER curved above tiny-crowned 9 X 10 shield, BOARDMANS BUILDINGS slung round this, LONGTON curved at foot. Arms as in last three.
P. 26

247 O.42
R.228 GREAVES' TEA / .FOR NEWCASTLE. occupying total periphery, in fancy serifed letters, around a minute-crowned 10 X 11 shield outline enclosing: 1/10 / lb (first 1 very tall).
P. 26

248 O.6
R.229 T R Y F . D I X O N ' S / . 2/6 T E A . (sanserif) around rim. MARKET SQUARE HANLEY . (serifed) as inner circular legend, enclosing small crowned shield. *Crown*: well-drawn. *Shield*: 8 X 7. *Scottish*: merely a thick vertical stroke. *Inesc.* absent.
P. 24

249 O.6
R.230 C. BASKER & SON / JEWELLERS & / CLOTHIERS / 75 & 76 WESTGATE / GRANTHAM (sanserif) arranged around upper rim, then in two lines straight across which are superimposed on the contents of a small-crowned shield and extend beyond it, then (outward) along lower rim. *Shield:* 13 X 12. Pronounced palar line, other details of arms obscured by the inscription.
Lincs. Muss.; P. 25½

250 O.25 (*See cat. no. 45.*)
R.231 ⋆ BARRONS ⋆ / 40.WATERWORKS S^{T}. HULL around crowned shield. FOR / WATCH / AND / CLOCK / REPAIRS across interior and base of crown and interior of shield, the last word extending beyond this. *Shield*: 13 X 11. Details of arms obscured by inscription.
Copper. P. 25

251 O.77 *Standard.*
R.232 PARKER'S FAMOUS 2/- TEA / ALL THE YEAR ROUND / STALYBRIDGE arranged as outer rim legend above and below, and inner legend arched above, a small crowned shield.
P.

252 O.25
R.233 JOHN WINTERTON / . ASHBOURNE . Curved above and (outwards) below a cock facing left, standing on ground – indicating the Cock Inn.
P. 25

253 O.25
R.234 . W.B & C^{O}. / ELBA STEEL WORKS (the spacing stops are mh for the initials but full-height for the words) around blank centre, which in the example holds '41' crudely punched by three blows for each figure.
P. 24½

254 O.78 *Standard.*
R.235 REEVES SMITH / ASTON LOWER GROUNDS John Macmillan collection; other details unknown. (*Cf.* cat. no. 56.)

255 O.6
R.236 A.EVERINGTON / WATCHMAKER / JEWELLER & C / 5 PELHAM S^{T}. NOTTINGHAM arranged along upper rim, then two lines straight across and extending beyond a shield, then (outwards) along lower rim. *Shield*: 13 X 12, surmounted by a narrow crown. Fourth quarter of shield very sketchily drawn – Brunswick compartment empty, inesc. indicated by an empty frame resembling an open book.
P. 25½

256 O.6(?)
R.237 .BENTON'S. / FOR TOBACCO & CIGARETTES / MANCHESTER (sanserif except surname), arranged at upper third and (outwards) remainder of rim and as inner arch above crowned shield; mh stops. *Shield*: 10 X 9½. *Inesc.*: absent. *Harp*: large.
P. 26

257 O.6
R.238 SPENCER'S TEA IS THE BEST.32LONG ROW. / NOTTINGHAM (sanserif) arranged as outer circular legend (all inwards, starting at 6 o'clock) and arched above crowned shield. *Shield*: 11 X 10. *Scottish*: bordered by double parallel lines above and below and single lines at sides. *Lys*: tiny. *Inesc.*: absent.
P. 25

258 O.6
R.84 (*See cat. no. 96.*)
P. 24½

259 O.8 (*See cat. no. 12.*)
R.84 *As last.*
P. 24½

260 O.7 (*See cat. no. 11.*)
R.86 (*See cat. no. 98.*)
P. 25

261 O.79 *Standard* except no stop. Shallow, tall, young portrait (no resemblance to George III) with large nose and fleshy lips; lavish tie-ribbon with knot like a multiple figure 8, three large and one small curl curved forward on neck, a double loose end hanging and curling to touch top of first G, a large double curl on rear underside of truncation.
R.86 *As last.*
P. 25

262 O.79 *As last.*
R.239 IN MEMORY OF THE GOOD OLD DAYS / .1797. around crowned shield. Very similar to R.73, possibly an earlier state of that die; the lys look different.
H. 25½

263 O.9 (*See cat. no. 13.*)
R.240 BEECROFT & SONS / 16, PELHAM S^{T} / – ✡ – / NOTTINGHAM The outer wording forms upper and lower parts (blank-spaced) of a circle, the outer ends of the letters 3 mm from the edge of the flan. The street address is arched across, impinging below the upper legend, and has the ornament beneath. Sanserif.
P. 26

264 O.80 BEECROFT MARKET PLACE NOTTINGHAM around laureated George III head right.
R.241 Wholly occupied by frontal (Market Place) and perspective elevation of Exchange Buildings at Nottingham, showing Beecroft's corner site with their name on fascia of each frontage, and a sculptured rocking horse and hound occupying first and second floor panels at the side frontage. The time on the Exchange clock is about 1.30 or 5.05. A lampost stands in mid-pavement nearly at the street corner, and immediately above it the Time Ball shows above the roof.
H; P. 25½

265 O.81 GEORGIVS III DEI GRATIA 1770 around laureated head to right.
R.242 MACNIVEN & CAMERONS. / .WAVERLEY & RHAPSODY. // THEY COME AS A BOON / AND A BLESSING TO MEN arranged, with mh stops, as upper and (outward) lower rim legend, and flanking sanserif inner curved legend, to a broad-crowned shield-frame 13 X 13½ enclosing bold 1770 / TO / 1970.
Thick, plain-edged. The obverse lettering and engraving of the head have a sculptured quality, the same head-punch featured in a gilt obverse impression on the firm's bicentenary notepaper.
H; P. 25

266 O.82 A / PRESENT / FROM / BLACKPOOL (serifed) across, the placename slung, over and within thick larel stems along rim.
R.31 (*See cat. no. 39.*)
P. 25

267 O.83 *Standard*, except no stop. *Cliché*, top pierced.
R.243 .H.O.N.I.S.O.I.T.Q.U.I.M.A.L.Y.P.E.N.S.E. / 1798 around crowned shield. *Shield*: 13 X 14. Arms crude but heraldically correct except empty inesc. *Harp*: sturdy; tall back. *Cliché*, top pierced.
Batty ii 4136r (and s). H; P. 24
A strip of thin brass was stamped with these obverse and reverse clichés positioned bases inwards and slightly apart, simultaneously piercing their tops. The clichés were then folded double, still linked at bases by a tiny strip holding them apart, to form the outer case of a cheap locket. In between was a similarly formed slightly smaller pair of linked blank circles pierced at top, with large central aperture to contain a miniature portrait; this inner slide pivoted about a ring passing through the four piercings, and bore indented on it 'Patent 2313'68' (i.e. no. 2313 of 1868) relating to the whole device.
Mr M.I.H. Ewing has found an intact example of the locket holding two sepia photographs. There are some of the formed 'guinea', though inevitably the clichés are more usually found singly, and their slight flattening at base where the connection has been broken off would normally go unperceived. The legend of the reverse – the motto of the Order of the Garter – is however, a useful clue to recognition, as it has not otherwise been found in the imitation spade guinea series except on the conventionally struck cat. no. 94 (where it is mis-spelt).

268 O.6 (*See cat. no. 8.*) *Cliché.*
R.264 Variant of R.8 – broader crown, thicker shield outline, larger harp with head in line with front, curly-based 9 of date. *Cliché.*
P. 24
This 'guinea' too is the outer case of a locket, of same construction as the above patented one (cat. no. 267) but surprisingly of different make (reverse legend initials of Brookes & Adams). Reported from an example complete with pivoting slide (empty) and pivot ring.

269 O.6
R.245 —✣— BUY ONE OF OWEN'S GLADSTONE BAGS (inwards) around rim; .OWEN'S. (inwards) above / 1 PICCADILLY / MANCHESTER (outwards) at sides, forming

small-type (almost) circular inner legend; around small crowned shield. *Shield*: 10 X 10. All animals are lions passant except in Scottish arms, where double parallel lines serve in lieu of bordure. Lettering sanserif.

P. 26

270 O.6
R.246 TRY WILSON & Co's PURE INDIAN TEA —•— around rim, UPPERHEAD ROW semicircularly above medium-sized crown surmounting small shield. *Crown*: dotted outer edge of arches. *Shield*: 10 X 10½. *Scottish*: as for last above. *Inesc.*: absent. Lettering sanserif.

P. 26

271 O.6
R.247 .PNEUMATIC TYRE. at upper rim. REPAIRING / COMPANY across and beyond the quarters of a shield 12½ X 12 surmounted by a crown tapered to narrow base. 161.STRETFORD R^D at lower rim. Lettering sanserif. Armorial details obscured by wording.

P (2). 25

272 O.8
R.248 ADULT SUNDAY SCHOOL around upper rim, RECREATION slung below small crowned shield, (group of dots) GROUND (group of dots) along lower rim. *Shield*: 11½ X 10. Lettering sanserif.

P. 24½

273 O.84 Variant of O.39 – die altered by cutting away the king's chest, leaving a new wavy truncation projecting only very slightly beyond base of throat.
R.249 M.B.F.ET.H.REX.T.&.B(?).ET.L.D.S.R.I.AT.ET.I / .1798. around crowned shield from same punch as in cat. no. 229. A hole obscures the doubtful letter, which could be B, E, F, P, or R.

P. 25

274 O.39 (*See cat. no. 64.*)
R.250 .MACNIVEN & CAMERONS / RENOWNED PENS around rim, in tall heavily-serifed lettering, enclosing THEY COME AS A BOON AND A BLESSING TO MEN which, in tiny lettering, flanks a crowned 14 X 14 outline shield containing WAVERLEY / HINDOO / GOLD / WING / PENS in lettering of same shape as in the outside legend but smaller.
Edge: Plain.

P. 25

275 O.6
R.251 JACKSON'S 2/- TEA IS THE BEST / . LIVERPOOL . (mh stops central to unequal spacings) around rim. 123 ST JAMES S^T / 57 / UPPER HILL S^T / AND / 40 UPPER STANHOPE S^T of which the first and last lines form an inner circular legend interrupted by the middle line forming a chord; the short lines are above and below this. All sanserif.

P. 26

276 O.85 B.GAUNT & SONS.MAYDAY GREEN.BARNSLEY / TEL.169 thin sanserif, around bust from same punch as in O.43*.
R252 BEST & CHEAPEST SHOP FOR WEDDING & ENGAGEMENT RINGS. (the ampersands are closed up to the words) thin sanserif, around crowned shield from same punch as in R.62*.
*See cat. no. 72; its fount differs.

P. 25

277 O.7 (*See cat. no. 11.*)
R.9 (*See cat. no. 9.*)

P. 25

278 O.86 3^D. large, occupying field. Dotted border close to rim.
R.38 (*See cat. no. 48.*)

P. 25

279 O.6
R.253 .BIRCH & BARTLETT. / IRONGATE HOUSE DERBY sanserif, address in small letters, between dotted border close to rim and inner circle (15 mm) enclosing FOR / CHEAP (fancy letters) / CLOTHING (smaller, sanserif).

P. 25

280 O.14
R.21 (*See cat. no. 24.*)
H. 25

281 O.87 Ornament T H E B L U E B U L L encircling 1½ all in large serifed characters.
R.254 . I N . T H E . G O O D . O L D . T I M E S . / 1788 around crowned shield. *Shield*: 13 X 12; well drawn, heraldically correct except no inescutcheon.
P. 27

282 O.88 E.EMMETT HATTER & C , DOUGLAS (serifed) / 1886 around George III laureate head r., with signature WILSON BROS / B,HAM (*sic*) (sanserif) curved between truncation and date.
R.255 TRY / EMETTS / CARDIGAN / JACKETS / AND / SHIRTS (sanserif except the surname – which correctly has only one 'M' whereas two on *obv.*) across the field, the outermost lines curved and flanked by small ornaments. Toothed border.
Peterborough Museum. 24

HALF GUINEA SIZE

144 O.129 GEOEGIVS III DEI GRATIA around small laureated bust right, the head almost circular and quite unlike George III.
R.138 T.B.ET.T.A.REX.F.D.PAR.S.T.D.S.T.M.S.ET.C / .1781. around crowned shield. (The P may be a broken B.) *Shield*: 10½ X 10. *Harp*: small. (Other details blurred by worn die, and a long die-flaw line runs upwards in field from near base of shield on left.)
H; P. 20½

145 O.130 Very similar to O.116 (see cat. no. 123) but smaller lettering and numeral 11; the ribbon loop points between E and O (formerly pointed to E).
R.139 W C.B .ET.CO.DG.IT.REX.FD.B.I.R.M. / 1790 (bl stops) around crowned shield; the crown flattened and shield 11½ X 11. *Harp*: seems to be in flight. Other armorial details as in R.119. The W double-struck.
Edge: Plain.
H. 21
Has small neat lettering and sharper fount and bust than most items in the 'half guinea' series.

146 O.131 *Standard* except GEORGIUS and no stop. Short die-crack between first two digits of numeral. Broad lower part of head, sharply tapered by almost straight outline from tip of nose to top of temple.
R.140 *Standard*, dated 1788. Arms heraldically correct, except that the inesc. does not extend into the Westphalian compartment.
Edge: Plain. Sturdy flan.
H. 22

147 O.131 *As last.*
R.141 Die identical with last except dated 1790.
Edge: Plain. Sturdy flan.
H. 22

148 O.132 Die identical with last except now standard (-VS and stop). Die-crack absent but slight serif-like mark over first digit of numeral.
R.141 *As last.*
Edge: Sturdy flan with milling as on a sovereign.
H. 22

149 O.133 Close copy of obverse of sovereign of William IV.
R.141 *As last.*
Edge: Plain.
Owned by an enquirer to the Royal Mint in 1964. 22

150 O.134 CRYSTAL / .PALACE. around small mullet in central 5 mm ring, rest of field stippled by intersecting arcs.
R.141 *As last.*
Edge: Plain. Sturdy flan.
H. 21

151A O.135 *Standard.* Forward-thrust tightly closed lips.
R.125 (*See cat. no. 129.*) Further to the original description of this reverse, the crown is small, not tiny, and the inesc. is extraordinarily large – but contains a rampant animal.
H. 21

152 O.136 *Standard* except no stop. Rounded thrust-forward head, reminiscent of that of George I on the Wood's and Rosa Americana coinage, well-defined eye. The top laurel leaves are two frontal and one rear with berries between their tips; a fourth rests on the top of the temple and has a berry on its underside. The short ribbon-end is horizontal, the long one is shaped as a reversed L.
R.142 Same legend as R.114 (G.Y.I. *etc.*) in small clear letters, around crowned shield 12 X 11 with serious heraldic errors. *First quarter*: Scottish arms in full tressure. *Fourth quarter*: Brunswick compartment has Westphalian horse but rampant (and a flag behind it) other two have each a passant animal; a horizontal zigzag line in lieu of the lower partition lines, and no inescutcheon.
H. 22½

153 O.137 *Standard* except no stop. Tall young head with cascading curls, similar to the 'guinea' obverse O.79 (see cat. no. 261) but fine instead of coarse.
R.114 (*See cat. no. 117.*)
H. 21

154 O.138 *Standard.*
R.143 W^M. SMITH / ENGRAVER / LETTER CUTTER / & DIESINKER / NEW MEETING S^T / BIRMINGHAM across, the first two lines arched and the last two bowed.
T.

155 O.139 *Standard* except no stop. A tall narrow fairly young portrait; the wig appears rolled up to back of head and has a steep straight external outline.
R.127 (*See cat. no. 131.*)
P. 20

156 O.139 *As last.*
R.144 IN MEMORY OF THE GOOD OLD DAYS / .1788. (sanserif letters, tiny figures) around crowned shield. *Shield*: 10½ X 11. *Westphalia*: compartment empty except for two metal specks diagonally.
H. 21

157 O.121 (*See cat. no. 131.*)
R.145 ALF.G.BATTE / —·—/ FISH / MERCHANT / . MILFORD HAVEN . the outer wording at rim, the rest across; sanserif except personal name.
P. 21

158 O.140 *Standard.* A mature lean head, tall, narrower than usual though with large nose; alert expression. The central top laurel leaf points just right of III, the next one just short of DEI.
R.146 Imitation, with blundered legend involving Greek letters, of obverse of Venetian ½-zecchino (design: the Doge kneeling before St. Mark) of Alvise III Mocenigo (1722–32).
P. 22

159 O.141 *Standard.* Large well-formed head with concave nose, narrow neck. The left-hand ribbon-end is arched and nearly touches centre of G.
R.147 J.G.REX.F.D.M.C.M.D.S.T.M.S.B.I.R.M / .1790. around broad-crowned 11 X 11½ shield. *Inesc.*: absent.
P. 21

160 O.142 *Standard.* Globular head with small features, seemingly perching on the neck.
R.148 . PLAY WITH "INTERNATIONAL SERIES" GAMES in neat square sanserif unlike the flamboyant fount usually carrying this legend; around shield surmounted by small crown. *Shield*: 11½ X 11½. Arms heraldically correct, though large harp seemingly winged and with double back.
P. 21

SUBJECTS AND LEGENDS

GUINEA SIZE AND A FEW ASSOCIATED HALVES

224 *E. Holley, draper, Bridport (Dorset)*

Edward Holley traded as a linen draper at 6 & 8 South Street, Bridport, from 1875/9 to 1906/9.

The portrait on this item and on the uniface Cat. No. 225 is by S. F. Lane, and the maker of them will have been Brookes & Adams (*BNJ* 32, p. 197).

226(-7); 159 *J.G.*

See brief note in *BNJ* 32, p. 214 about Cat. No. 73 with the same legend. There is still no solution, unless possibly the Birmingham firm founded in 1830 by *John Goode*; the predominant trade description 'machine chain makers' fits, and although the firm was never listed for diesinking or toolmaking, those could have been incidental in the business. The counters would have had to be issued while the firm bore the style 'John Goode & Sons' which dated from *c.*1858 replacing 'John Goode Jnr.' and stayed for many years at his last address 3 Regent Place, Caroline Street, as makers of gold and silver guard chains and of machines for making them. The present style is John Goode & Sons (Birmingham) Ltd, at 83 Northwood Street, Birmingham, 3 (formerly of Quality Works, 4 Great Hampton Street, Birmingham, 18), manufacturing goldsmiths.

228 *C.S.*

No solution for this further Birmingham 'chain maker, diesinker, toolmaker' has been found among the ranks of makers of jewellery chains, the dominant asserted trade.

229–30, 273 (*Mute*)

A. H. Darby (*BNJ* 32, p. 211) is now considered to have been the maker of Cat. No. 64 and thus also of these three. Therefore the make of Cat. No. 65 is now attributed to J. R. Gaunt & Son Ltd.

231–2 Further issues of Cook & Co., Manchester, Ltd (*BNJ* 32, p. 210).

233 *C.L. & C.L. ?* .

The issuer, trade, and locality remain a mystery after various testings.

234 *J. Sainsbury (London)*

See *BNJ* 32, pp. 209–10. This item by mentioning the premises in Seven Sisters Road dates to within 1899–1914.

The grocery business at the shop 'opposite West Croydon Station' featured on Cat. No. 58–9 and 75 closed in 1969/70. Sainsbury's used the empty but still fitted premises during ensuing months for training their and other local retailers' staff in operating sales tills in dummy transactions expressed in the then impending 'decimal' national currency. In 1971 the premises passed to new owners and became refitted as a retail shop in a different trade.

235 *Hall & Pawson, tea dealers, Stockport (Cheshire)*

This was a brief partnership during years within 1876–83 between Samuel Pawson and William Joseph Hall in the latter's established grocery and tea dealer business at 3 Market Place and 79 Wellington Street South. The business then continued at the same dual address with style Wm. J. Hall & Co.

236 *F.G. Myers, supply stores, Rotherham (W. Riding of Yorks.)*

Frederick George Myers first appeared in Rotherham in 1875/8 at Central Buildings, West Gate; trading as a grocer, tea dealer, Italian warehouseman, and provision merchant. By 1883 he entered partnership with John Burley Kay and ran the same lines of business under the style Myers & Kay, Rotherham & West Riding Supply Stores, for some years at a settled address 5 & 7 Westgate.

The item names Myers and also his store name, but must belong within 1875–82 i.e. prior to the partnership.

237 *Barnes, tea dealer, Walton, Liverpool, and Wrexham*

William Barnes (& Co. 1882–5) had his Liverpool shop from 1877 at 223 Great Homer Street, and during 1883/4–1886/8 he had a branch shop (initially at no. 645, then 167 & 195) in Rice Lane, Walton-on-the-Hill, a separate town that Liverpool absorbed. At Wrexham (Denbigh, Wales) the branch opened in 1882 at 35 Hope Street and (like the one at Walton) was gone by 1889.

238 *Charles Arden, grocer, Liverpool*

Besides using other addresses, he used 356 Mill Street from 1876 (shortly after his start in business); 212 Windsor Street from 1878; and 238 Mill Street in sole year 1879 which fixes the year of issue of the item.

239 *Samuel Mayne, grocer, Liverpool*

No. 200 Walton Road was one of his several shops during 1879–86/8, and was his sole shop during 1880–3/4 which indicates a close dating for the item.

240 *John Mitchell, grocer & provision merchant, Liverpool*

His main address 111 Great Homer Street dated from 1875/6 and his branch at 129 Heyworth Street from 1879. He took 169 Mill Street from 1883. His giving up 21 Copperas Hill (used since the 1860s) in 1883/4 and his expansion of 120 Mill Street to 120/122/124 in 1884/5 provide for the item an issue year 1884.

241 *John Smith, tea dealer, Liverpool*

The address on the item was clearly vital at the time of issue to distinguish his out of a welter of tea dealer/grocer shops in Liverpool listed in the same name. He ran the shop at that address 29 West Derby Road in his own name during 1880–1 following his presence there in partnership as Smith & Bateson.

242 *Wilson, tea dealer (Liverpool addresses)*

Hartley Wilson ran shops at the specified addresses (a) 220 Mill Street (ex his partnership with John Wilson, to whom in exchange he handed over one at 12 Lark Lane) during 1877–86/8, and (b) 162 Windsor Street (Toxteth Park) from 1879 to 1891 and onwards. He took over in 1886 one at 7 Aigburth Road, Grassendale from John (upon the latter's apparent cessation of business) and soon added more.

Thus the issue dating of the item lies within 1879–85 when he had simply the two addresses marked on it.

243 *Newby, engraver, Cardiff*

This item reveals the maker of it and thereby of also Cat. Nos. 67 (*BNJ* 32), 221–2 (*BNJ* 37), and 244–7; using distinctive obverses O.42 and its variant O.76, and, on reverses, special characteristics of a small crowned shield of the then current (instead of George III's) royal coat of arms, and exhortative wording (Cat. No. 237 is the sole recorded exception of a different make) in the issuers' advertising.

The tiny crown over these shields is thought to have been inspired by the one privately owned by the Queen which appeared on Boehm's portrait of her in the 1887 Jubilee gold and silver coinage; indeed the foregoing group of 'guineas' can be dated to within the issue period 1887–92 of that coinage.

Edgar Newby, engraver, was active in Cardiff 1881–1911 (as Newby Bros. during 1909–10); initially at 8 Cowbridge Road, then at 115 Cowbridge Road, 1884–9, the Arcade in Queen Street 1889–91, 23 Castle Street 1892–1908, and 18 Custom House Street 1909–11.

244 *B. Holmes, machine agent, Skipton (Yorks.)*

Benjamin Holmes had a sewing machine depot at 58 High Street, Skipton, from 1881/3 until at least 1893. The machine on his 'guinea' sounds agricultural and may have been among those made by Holmes Pearson & Midgley, of Keighley.

245 *D. Jones, hatter, Liverpool*

David Jones, hat and cap maker, started business *c.* 1860. He used the specified address 30 St. James's Park (Toxteth) 1867–91 and then moved to 255 Park Road.

246 *Kent, hatter, Longton (Staffs.)*

Richard Kent, hatter & hosier, traded at Boardman's Buildings, Stafford Street, from 1888/91 until at least 1895.

247 *Greaves, tea dealer, Newcastle (upon Tyne)*

John Greaves (residing at Kenton Lodge) ran a small chain of grocery shops in Newcastle upon Tyne over a period including 1872–88, with main address 5, 7, 19, Nun Street.

248 *Dixon, tea dealer, Hanley (Staffs.)*

This was probably Francis Dixon, grocer, who traded at 2 (Upper) Market Square from 1876/9 to 1887/90. A predecessor of the 1860s was William B. Dixon, tea dealer & grocer, Market Square.

249 *C. Basker & Son, jewellers & clothiers, Grantham (Lincs.)*

This item is listed as no. B25 in Lincolnshire Museums Information Sheet, Numis-

matic Series No. 2 (1980). From 1889/91 the business and address details were static as Charles Basker & Son, pawnbroker & jeweller, 75 & 76 Westgate, until the 1930s.

250 *Barron, watch & clock repairer, Hull (Yorks.)*

Charles Huddleston Barron operated at the specified address 40 Waterworks Street. He first appeared in 1885/8 as manager for the Waterbury Watch (Sales) Co. Ltd. This was a U.K. subsidiary company of an American manufacturer. Then from 1889/91 Barron ran his own business as a watchmaker & jeweller.

251 *Parker, tea dealer, Stalybridge (Ches.)*

William Peter Parker was listed from 1869/73 until 1891 or later as a grocer & provision dealer at 93 Market Street, then by 1900 and onwards as a milliner and dress maker at 95 Market Street.

252 *John Winterton, (Cock Inn), Ashbourne (Derbyshire)*

In Dig Street, John Winterton (a) traded as a toy dealer, with a toy warehouse, (b) also ran the Cock Inn from 1874/5 to 1893/8, though some listings in that period show as proprietor Francis J. Winterton, his son; who apparently succeeded him.

253 *W.B. & Co., Elba Steel Works*

Elba Steel Works was situated at Gowerton, Swansea, Glamorgan. Its proprietors indicated by the initials were Wright, Butler & Co., before becoming 'Ltd' by 1910. 'Elba' was used as its telegraphic address by later owners Baldwins Ltd.

254 *Reeves Smith, Aston Lower Grounds*

See *BNJ* 32, p. 208 (and *Corrigenda*). The Reeves-Smith family was in charge at Aston Lower Grounds from 1882 to 1889/90.

255 *A. Everington, watchmaker, jeweller, Nottingham*

Alfred Everington was first listed in 1863, as an assistant watchmaker (living) at 7 Arboretum Terrace; this was during employment which, in his advertisement two years later, he said had been as foreman at Pearce's for 12 years. (That business was of George Pearce, watchmaker & silversmith, in Pelham Street; there was also Rebecca Pearce, silversmith & jeweller, 24 Pelham Street.)

In 1865 Everington set up his own business at 5 Pelham Street as watchmaker, jeweller, and silversmith; this address remained constant until 1869, thus dating the 'guinea' to within those years (probably issued straightway in 1865). The address expanded in 1870 to nos. 3 & 5, and again in 1878 to nos. 3, 5 & 7. By 1907 it was back to nos. 5 & 7 and the shop was run by his executor; finally in 1911 as A. Everington Ltd, after which a fresh jeweller took it over.

256 *Benton, tobacconist, Manchester*

The issuer was Frank Benton, active from 1887/91 at 124 Medlock Road, Hulme, Manchester, and various branch shops. The 'guinea' was used to advertise his firm on the occasions to two royal visits to Manchester – in 1894 by Queen Victoria to declare open the Manchester Ship Canal, and in 1902 by the Prince of Wales to open Whitworth Hall as an additional part of what became Manchester University.

The information on usage was kindly provided privately (1975) by a successor proprietor Mr F. C. Benton trading in the same line of business at 11 Brundretts Road, Chorlton-cum-Hardy, Manchester, M21 1DA.

257 *Spencer, tea dealer, Nottingham*

No. 32 Long Row was occupied in the name Henry Spencer 1873–4 as grocer & provision dealer, then as Henry Spencer & Co. 1875–87 as tea dealers & grocers, with no. 33 added in 1886. The business continued thus until 1899, though listed at no. 33 only (plus branch shops) until again 32 & 33 from 1893. The final phase of use of this address was as Spencers Ltd 1900–10.

The 'guinea' was probably first issued within the first spell 1873–85 of using no. 32 as sole address.

A fresh phase began in 1913 under a firm styled H. Spencer & Co., tea merchants, at 15 Foreman Street.

258–61, 263–4; 155, 160 *Beecroft's toys, Nottingham*

See *BNJ* 34, p. 159. The firm gave up the premises in Drury Hill on expiry of lease in December 1967, having in the same year acquired replacement premises at 42 Pelham Street. By 1979 it moved again, to 7 College Street. Meanwhile, it also again took a pitch in the Central Market, which by 1979 became Victoria Market, Victoria Centre.

The firm's earlier sojourn 1925–64 in Pelham Street was at no. 16. Cat. No. 263

was made by G. Y. Iliffe whose business ceased in 1934, thus dating this item to within 1925–34. Cat. No. 264 was issued in 1887 at the opening of the shop in Exchange Buildings.

265, 274, 280 *Macniven & Cameron*

See *BNJ* 32, pp. 201–3; in 1972 the style became Waverley Cameron plc. No. 274 was made by A. H. Darby and no. 265 by his successor W. H. Darby & Son Ltd. The 'Gold Wing' brand of pen (nib), on no. 274, was introduced in the late 1930s and sold mostly to India and the Far East. The original 'Waverley' brand is still produced for occasional orders.

266 *'A present from Blackpool' (Lancs)*

Simply one of the many novelties that would abound at this seaside town. The Bancroft Bros. reverse (see *BNJ* 32, pp. 203–4) confirms them as actual makers of 'guineas' and halves.

267–8 (*Frames for lockets*)

Batty's catalogue recorded, in addition to item 267 'guinea' alone, a specimen of the complete article and the Patent no. marked on it, enabling the patentee's identity and specification as printed to be traced. A brief summary of the construction appears beneath item 267 entry. The drawings accompanying the specification show a depiction of the 'guinea' casing instantly recognizable as replicating the dies of it. The patent, dated 23 July 1868 and sealed on 3 November 1868, was granted to 'William Gilbert, stamper & piercer, Birmingham'. Of several tradesmen so named operating there, the one in that line of business was listed 1867–77 at 65½ George Street, Parade.

He probably marketed the locket immediately the patent had been granted; having pre-produced it, as the replica drawing implies, and merely indenting the patent no. when known on to the 'slide' where Batty observed it. Thus 1869 can be taken as issue year.

Item 268, on the other hand, is a similar outer case stamped from Brookes & Adams 'guinea' dies; raising delicate speculation about which of the two firms was the real inventor of the device. It could well have been B. & A., who in the late 1860s originated the coded initials form of reverse legends on 'guineas'; as, otherwise, their locket would have had to wait until Gilbert's patent had expired, when the novelty would have become stale.

269 *Owen, Gladstone bags, Manchester*

Gladstone bags, named after the statesman W. E. Gladstone and now seldom seen, were an early form of men's leather business holdall, with a stiff rectangular base and stout sides rising to a lockable spine.

John Owen & Co. Ltd. was formed in 1886 and thereupon shifted from 15A to 1 Piccadilly the principal shop, to continue the late John Owen's expansion of a Manchester business (founded in 1824) of Fancy Repository and (from the 1870s) manufacture of perambulators. In an entry (p. 125) among those for thriving local businesses in *Manchester of Today* (1888), this new company's factory Globe Steam Works, Pendleton, was said to employ many hundreds of workpeople; its warehouses at 49 & 51 Shudehill were said to hold an immense variety of stock of English and foreign manufacture, and Gladstone bags were included in representative lists ranging from billiard tables and bath chairs to inkstands and port-monnaies. In 1888 the style changed afresh to Owens Bazaar Co. Ltd., bassinette makers, still using 1 Piccadilly until 1900; the business ended in 1903.

270 *Wilson & Co., tea dealers, Upperhead Row*

Locality untraced. Huddersfield has an Upperhead Row; Leeds had Upper Head Row, now the western section of its Head Row.

271 *Pneumatic Tyre Repairing Company, 161 Stretford Road*

Stretford Road is one of the major thoroughfares of Manchester, but did not contain the address of any, out of a sudden spate in that city during 1892–8, of six company names featuring the term 'Pneumatic'; all of them gone by 1904 except for the Dunlop Pneumatic Tyre Co. Ltd. Only one of the six gave its function as repairers and was not 'Ltd' – The Pneumatic Tyre & Cycle Repairing Company, cycle repairers, 1 Altrincham Street, London Road, listed for a single year 1898.

272 *Adult Sunday School recreation ground*

There are no clues to its locality.

275 *Jackson, tea dealer, Liverpool*

Michael Jackson, tea dealer, expanded his business at 123 St James's Street as sole shop by adding from 1867 successive branches of which 57 Upper Hill Street (opened in 1868/9) was the only survivor when he opened the one at 40 Upper Stanhope Street in 1883. His main shop moved next door to 121 St James's Street in 1890/1. Thus the two last-mentioned datings bracket the period within which his 'guinea' was issued.

276 *B. Gaunt & Sons, wedding &c rings, Barnsley (Yorks., W. Riding)*

According to E. G. Tasker, *Barnsley streets* (*c.*1974), no. 4 (p. 9), Benjamin Gaunt's business at no. 3, later 3–4, May Day Green lasted 1863–1929; a picture of the shop is included (p. 10). The style was expanded to '& Sons' as from 1883 (*Barnsley Illustrated Annual*, 1897). Whereas the crucial clue for dating this 'guinea' should be the date when a telephone was first installed at the shop (expectably around 1900 by analogy with cat. no. 72), directory coverage of Barnsley was infrequent; the first entry showing Gaunt's tel. no. Barnsley 169 was for 1921, previous entries up to 1911 showing none.

277; 152–3 Items bearing the initials G.Y.I. of George Yorke Iliffe as maker and issuer: see *BNJ* 32, p. 198.

278; 145 Items bearing initials W.C.B.: see *BNJ* 32, pp. 205–6. Note: Taunton Museum acquired a specimen of Cat. No. 47 in 1903.

279 *Birch & Bartlett, clothiers, Derby*

A firm of clothiers, outfitters, hatters, &c., which used the specified address Iron Gate House, at 10 Iron Gate (modernly Irongate), Derby, for a brief spell around 1880 (maximum span 1876–82).

281 *The Blue Bell*

A check for a public house of unknown locality but reported from Notts., an adjacent county to Lincs. in which at Grantham there was a series (some survive) of public houses with animal names incongruously prefixed 'Blue' – collectively the 'Grantham Blues', a Whig political indication imposed in the 1840s on all inns within his manorial jurisdiction by Sir William Tollemache, later Lord Huntingtower. The preposition 'In' gives a hitherto unrecorded reading variation of the mute reverse legend.

282 *E. Emett, hatter, Douglas (Isle of Man)*

At the date 1886 on the 'guinea', the issuer was listed as Edward Emett, hatter, 22 (or 23 & 25) Duke Street, Douglas; and the only Birmingham firm with a name to fit the signature was Wilson Bros. & Co., bedstead manufacturers (!), Standard Works, Ledsam Street.

HALF-GUINEA SIZE

(Cat. Nos. 145, 152, 153, 155, 159, and 160 have been covered in the preceding section.)

144 *T.B. et T.A.*

See *BNJ* 32, p. 197.

146–50 (Mute)

An inter-dielinked anonymous grouping. Cat. no. 149 may well have been contrived for fraudulent passing as a gold sovereign (before those of William IV were demonetized in February 1891), its discordant ½-guinea type reverse being the maker's excuse if detected. Yet curiously the only milled edge in the group was on no. 148. No. 150 was probably a novelty sold at the Crystal Palace at Sydenham (London, S.E.). (Nos. 146–8, of standard type, are brought into the Catalogue by reason of their dielinks with the others.)

151A, 160 *"International Series" games*

For the issuer see *BNJ* 32, p. 211. (The suffixed numeration 151A is because at this point the serial nos. overrun the sole miniature item numbered 151.)

154 *William Smith, diesinker etc., Birmingham*

He was active in Birmingham at a fixed address (no. 12 until 1868, no. 12A thenceforward) New Meeting Street, Dale End, Birmingham, 1862/3–97; and produced many checks and tickets signed by him for tradesmen in Birmingham and elsewhere, of which the checks for local publicans emerged throughout his above span.

The deduced purpose of the present item was to demonstrate that he was willing

to accept orders for counters in the imitation spade series, and it may have been issued at the same time as another such sample counter by him dated 1876 (showing a fan of three cards). No resulting orders using Obv.138 or his three-cards die have been detected.

156 (Mute)

Regarding the reverse legend, see *BNJ* 32, p. 175. The maker of this item was the same as for cat. no. 155 and thus one of the suppliers mentioned above in the notes against nos. 229–30.

157 *Alfred G. Batte, fish merchant, Milford Haven (Pembrokeshire)*

Alfred George Batte took over in Easter week 1914 his brother John's business as wholesale fish merchant at Milford Haven Docks, and continued it until August 1959.

This information was kindly provided from his business records by his daughters, Mrs S. Davies of Milford Haven in consultation with her sister. The local area public library at Haverfordwest, Dyfed, had kindly traced the family, enabling direct approach to be made.

158 *Mule with imitation Venetian coin*

The prototype Venetian gold coinage used normal Roman lettering. The present reverse – same die as used by the unknown Birmingham maker in a series of imitations (both faces) of this Doge's zecchino and ½-zecchino which were produced successively somewhere in Africa (of the larger coin only), Birmingham, and – by John Cooke & Sons (whose name appeared on them in Latin as Johannes ille coquus filiique) – London.

ISSUE-DATING

GUINEA-SIZED

Cat. nos.	*Dating*	*Cat. nos.*	*Dating*	*Cat. nos.*	*Dating*
224	(1880s)	246	*c.*1890	265	1970
225–8	Unknown	247	1887–92?	266	Unknown
229–30	1920s	248	1887–90	267	1869
231–2	1910–10?	249	*c.*1890	268	Unknown
233	Unknown	250	1889–92?	269	1886
234	1899–1914	251	*c.*1870?	270–2	Unknown
235	1876–83	252	1874–98	273	1920s–30s
236	1875–82	253	1882–90	274	Late 1930s
237	1883–8	254	1880s	275	1883–91
238	1879	255	1865(–9)	276	By 1921
239	1880–4	256	1894, 1902	277	1878–81
240	1884	257	1874–85	278	*c.*1900?
241	1880–1	258–9	1878–87	279	1876–82
242	1879–85	260–1	1887–1907	280	1886
243	1887–92?	262	1890s?	281	Unknown
244	1887–92?	263	1925(–30)	282	1886
245	1887–91	264	1887		

HALF-GUINEA SIZED

Cat. nos.	*Dating*	*Cat. nos.*	*Dating*
144	Before 1908	153	*c.*1890?
145–8	Unknown	154	*c.*1876?
149	pre-1891?	155–6	1887–1925
150	Unknown	157	1920s?
151A	1920–39?	158–9	Unknown
152	Unknown	160	1920s

Acknowledgments

Material for cataloguing has been kindly provided by reports and rubbings or photographs from a dozen private collectors, including details of the locket-based items 268 from Mr A. Wager and subsequently 267 from Mr G. Chamberlain; from Mr A. J. H. Gunstone about items in museum collections under his care and others that he visited; and from Mrs M. Warhurst, lately Keeper of Antiquities, Merseyside County Museums, about items in Liverpool Museum. Some of the directory researching was kindly performed, and related information supplied, by the public libraries at Chester, Lincoln, Manchester, Rotherham, Sheffield, and Wrexham; by Messrs. G. Chamberlain, E. W. Danson, and J. P. Moffat. Sources for the note on item 157 were as there acknowledged, and the kind source for the notes on the group of Macniven & Cameron items was as heretofore Mr Waverley B. Cameron, Managing Director of the company as re-styled Waverley Cameron plc.

SHORT ARTICLES AND NOTES

A *TREMISSIS* OF JUSTIN II FOUND AT SOUTHWOLD, SUFFOLK

DAVID SORENSON

A GOLD *tremissis* of Justin II (565–78), which in March 1984 passed through the hands of a Cambridge coin dealer, is said to have been found by a metal-detector user on what was claimed to be a 'Saxon site near Southwold'. The coin appears to be a *tremissis* of Constantinople similar to Dumbarton Oaks catalogue nos. 13–14[1] and two specimens in the Bibliothèque Nationale.[2] The legends on the coin read:

Obv. ///IVSTI NVSPPAVI
Rev. VI//////AVGVSTORVI and in ex. COHOB

It weighs 1.49 g and has a die axis of 180°.

Of the twenty Byzantine coins or close derivatives of the sixth and seventh centuries found in England and listed by Rigold,[3] one is a *tremissis* of Justin II found at Canterbury and one is a *solidus* of Justin I or II found at Richborough. The majority of coins of this period in this country are barbarous imitations of imperial coins, many of them Merovingian.

[1] A. R. Bellinger, *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection* 1 (Washington, 1966), p. 202, nos. 13–14.

[2] C. Morrisson, *Catalogue des monnaies byzantines de la Bibliothèque Nationale* 1 (Paris, 1970), p. 128, nos. 11–12.

[3] S. E. Rigold, 'The Sutton-Hoo coins in the light of the contemporary background of coinage in England', in *The Sutton Hoo Ship-Burial* 1, edited by R. L. S. Bruce-Mitford (London, 1975), pp. 653–77, at 665.

A PENNY OF COENWULF AND A SMALL HOARD OF CNUT FROM BOTTISHAM, CAMBRIDGESHIRE

M. A. S. BLACKBURN

BOTTISHAM is a village on the edge of the Fens seven miles north-east of Cambridge. It lies just to the north of the Cambridge to Newmarket road (A45). The presence of earthworks, crop marks and finds of artifacts suggests that there were significant prehistoric and medieval settlements in the parish.[1] The village is recorded in Domesday and we know that there were a number of later medieval manors. No archaeological evidence of Anglo-Saxon settlement has been found, but a pagan Saxon barrow was excavated in the nineteenth century and fragments of two ninth-century bronze strap-ends were recently found in the same vicinity as the coins of Cnut described below.[2]

A penny of Coenwulf of Mercia (796–821) was found near the village by Mr P. L. Evens on 5 April 1983 (Plate, No. 1). It was discovered with the use of a metal detector in pasture at a depth of about six inches.[3] The finder promptly took the coin to the Fitzwilliam Museum for identification and it has since been acquired for the collection.[4] It is a penny of the *Tribrach* type (*BMC* 93; North 342) by the Canterbury moneyer Seberht (OE Sæbeorht) and was struck between *c.*798 and *c.*805. The legends read:–

'+C'OE'NVVLF R'EX
SE BE RHT (HT ligatured)

Blunt, Lyon and Stewart have recorded six other specimens of this moneyer and type.[5] This coin is from the same reverse die as *SCBI* (20) Mack 578 and Ryan (Glendining, 22 January 1952) lot 632, but the obverse appears to be previously unknown. It weighs 1.27 g (19.6 gr) and has a die-

[1] Royal Commission on Historical Monuments, *County of Cambridge* 2 (London, 1972), 2–18.

[2] Recorded in the Cambridgeshire County Council's Archaeological Record.

[3] The precise findspots of this and the Cnut coins have been withheld from publication for reasons of security, but they are recorded in the Cambridgeshire County Council's Archaeological Record.

[4] It will appear in the forthcoming catalogue *Medieval European Coins in the Fitzwilliam Museum* 1, no. 1139.

[5] C. E. Blunt, C. S. S. Lyon, and B. H. I. H. Stewart, 'The coinage of Southern England, 796–840', *BNJ* 32 (1963), 1–74, at 51, no. 12.

axis of 290°. The metal has been heavily corroded in the soil resulting in perforation of some areas and a significant loss of weight, but the coin does not show signs of long circulation. This type could theoretically have remained in circulation in Wessex until the mid 850s, in Mercia until the early 860s and even later in East Anglia, but the significant rate of natural wastage from the currency means that it is unlikely to have been lost much after 825.

The other find of Anglo-Saxon coins from the parish was made six months earlier in October 1982 by Mr A. E. J. Rank. Three coins of Cnut (1016–35) were found with a metal detector in a field some way from the village. They lay within a radius of five yards of each other within the top two inches of the plough soil. The coins were all of the *Short Cross* type (North 790), dated by Dolley *c.*1030–1035/6, and they evidently constitute a small purse-hoard or possibly part of a larger hoard, although no more has been found. Soon after their finding Mr Rank informed the local coroner and the County Archaeologist, and took the coins to the Fitzwilliam Museum for identification. They are temporarily deposited there pending determination of their final disposition.

They may be described as follows:

i. *London*, moneyer Brungar. (Plate, No. 2)

+C//////T RECX
+BRVNGAR ON LV:

Wt. 1.13 g (17.4 gr). Die-axis 90°.
Slightly buckled, obverse deformed and traces of black deposit on reverse.
Same legends as Hildebrand[6] 2086.

ii. *London*, moneyer Swan. (Plate, No. 3)

+CNV / T RCCX
+SPAN ON LVND

Wt. 1.06 g (16.4 gr). Die-axis 180°.
Traces of black deposit on obverse and reverse.
Same legends as Hildebrand 2707. Same dies as *SCBI* (14) Copenhagen iiiB, 2919 and same obverse as *SCBI* (14) Copenhagen iiiB, 2921.

iii. *Stamford*, moneyer Fargrim. (Plate, No. 4)

+CNV· / · TRE+
+FARGRIM ONI STAN

Wt. 0.95 g (14.7 gr). Die-axis 160°.
Traces of black deposit on reverse. Same legends as Hildebrand 3256. Same dies as *SCBI* (27) Lincolnshire Collections 1297.

Each of the coins has traces of a black deposit or patination suggesting that they have been through a fire and the obverse of No. i may have been deformed by heat. Even if the coins had been lying on the surface, it is unlikely that crop burning could have generated sufficient heat to blacken both sides as on No. ii. It is more probable that they had been concealed in a house that was burnt down, or found their way into a hearth.

In the *Short Cross* type the weight standard was progressively reduced from *c.*1.2 g to *c.*1.0 g or even less at some mints, and the weight of a coin can thus give some indication of its relative date.[7] No. i falls in the upper half and No. ii virtually at the mean of the weight distribution of London coins. The Danelaw mints, such as Stamford, struck to slightly lower weight standards, but even so No. iii is well down in the lower half of that region's weight distribution, suggesting that it was not struck early in the issue. The find can scarcely be earlier than *c.*1032. Equally is it unlikely to have been deposited later than the autumn of 1036, for the recoinage introducing the *Jewel Cross* issue probably commenced in spring 1036. A date of deposit of *c.*1035 is suggested.

The coins are too few to comment on the proportions in which the mints are represented or on the absence of coins of Cambridge. One could well expect coins of London and Stamford to be found circulating in this region.

The find might be summarized in *Inventory* form:-[8]

BOTTISHAM, Cambridgeshire, Oct. 1982
3 ℞ Anglo-Saxon. Deposit *c.*1035
KINGS OF ENGLAND: Cnut, *BMC (A)* type xvi–London: Brungar, 1; Swan, 1; Stamford: Fargrim, 1.
BNJ 53 (1983), 176–77.
Disposition: temporarily deposited in Fitzwilliam Museum.

[6] B. E. Hildebrand, *Anglosachsiska Mynt*, 2nd edition (Stockholm, 1881).

[7] The weight distributions are set out in H. B. A. Petersson, *Anglo-Saxon Currency* (Lund, 1969), p. 217.

[8] I am grateful to the finders, Mr Evens and Mr Rank, for the very prompt and proper action they took in reporting these coins and for their subsequent assistance towards the preparation of this note.

AN OXFORD PENNY OF WILLIAM I

IAN STEWART

IN the Fitzwilliam Museum, Cambridge, from the J. S. Henderson bequest (1933), is a *Two Sceptres* (*BMC* type IV) penny of William I, the reverse reading of which is recorded on the ticket as BEMVSED ON OXEN. Not surprisingly, no known Oxford moneyer is so named. Although correctly read, this inscription was never originally on the coin, which is badly chipped and has been 'repaired' with a small fragment of another coin reading –EMVS– (or –LMVS–) and –PINE–. Whether or not this was deliberately chosen, and inserted obverse to reverse, as an academic jest, the practical effect had been to obscure the existence of an unpublished coin. A moneyer Brihtred is well

attested at Oxford at this period (Brooke notes coins of *BMC* types II, III, VI and VIII of William I, and type II of Rufus), and there is little risk in assuming that B————ED here indicates the same moneyer. I am indebted to Mr T. R. Volk for the photograph.

ST ANDREWS MINT UNDER DAVID I

JOAN E. L. MURRAY AND IAN STEWART

THE reappearance of a David I sterling with an unusually legible reverse has made it possible to establish that St Andrews mint was in operation in this reign. As many as seven coins, from four die combinations, have now been recognised.

In the accounts of Alexander III's confirmation of the right of coining to Bishop William Fraser of St Andrews in 1283, it was stated that this right was given as freely as in the time of the king's father or any of his predecessors.[1] It is thus not surprising that this privilege should date back to David I, who initiated the Scottish coinage. St Andrews diocese was the most important in Scotland and David attempted to obtain metropolitan status for the see. St Andrews was a place of pilgrimage and some settlement there doubtless preceded the erection of the bishop's burgh, by leave of David I, which was probably at about the same time as the foundation of the priory, for which papal confirmation was granted in May 1144. A charter records that Bishop Robert made Mainard the Fleming his reeve (*praefectus*) in the burgh, also granting him and his heirs three tofts there, to be held for payment of sixteen pence. This was because Mainard was one of the first to build and stock the burgh, and it required the king's consent, since it was the king who had given (*tribuit*) to the bishop the vill of St Andrews and also Mainard, his own burgess in Berwick.[2] The moneyer of the St Andrews coins appears as Me(i?)nard on one die and Menaud on another, and the rarity of the name makes it almost certain that he was the same man as the Mainard of this charter, whose status appears to have been appropriate. The Perth moneyer, on coins with pellet-in-annulet reverse,[3] is likewise believed to be a Fleming, Baldwin the lorimer, referred to as the king's client.[4]

The St Andrews coins have a pellet in each quarter of the reverse cross fleury, which is the commonest type in Stewart groups I, II and III. The recorded specimens are all illustrated on the Plate. The collated readings are as follows:

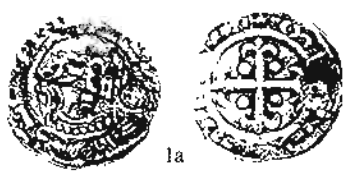
1. Obverse (+)NAVIT (RE)+ or ending TI.(R)+ (retrograde)
   Reverse +mE(I?)NARD.I. SA: (S sideways, second A inverted)
   a. Mrs Murray, ex Dr E. J. Harris and Dr A. N. Brushfield (lot 24a, Glendining, 28 March 1940), pierced and plugged
   b. British Museum (Plate XLI, 2, in H. A. Grueber, *Handbook of the Coins of Great Britain and Ireland in the British Museum*)

[1] W. Bower, published as *Joannis de Fordun Scotichronicon cum Supplementis et Continuatione Walteri Boweri*, edited by W. Goodall (Edinburgh, 1759), II, 127; *The Original Chronicle of Andrew of Wyntoun*, edited by J. F. Amours, Scottish Text Society (Edinburgh, 1907), V, 126. Both are quoted in E. Burns, *The Coinage of Scotland* (Edinburgh, 1887), I, 159–60 and J. Stewart, 'Scottish Mints', *Mints, Dies and Currency: Essays in Memory of Albert Baldwin*, edited by R. A. G. Carson (1971), p. 220.

[2] *Early Scottish Charters prior to 1153*, edited by A. C. Lawrie (1905), No. clxix; *A Source Book of Scottish History*, edited by W. C. Dickinson, G. Donaldson and I. A. Milne, second edition (1958), I, 103–4. The charter is known only from a late transcript.

[3] *Coin Hoards* I (1975), Fig. 20.19. These coins are classified as Stewart IVc, IV being the earliest group of the reign – I. H. Stewart, *The Scottish Coinage*, second edition (1967), p. 191.

[4] For the role of Flemings in this context in Scotland, see R. L. G. Ritchie, *The Normans in Scotland* (1954), p. 313; A. A. M. Duncan, *Scotland: The Making of the Kingdom*, The Edinburgh History of Scotland, I (1975), 476–7; W. M. Mackenzie, *The Scottish Burghs* (Edinburgh, 1949), pp. 20, 36.


1a


1b


2


3a


3b


3c


4

2. Obverse ( )AIVT( ) or perhaps ( )AVIT( ), with inverted A
   Reverse same die as 1
   Dr Stewart
3. Obverse same die as 2
   Reverse +2 mENAVD: SAN (S sideways, square A, second N reversed)
   a. and *b.* Dr Stewart
   c. R. C. Lockett (I[16] on the complete plates of the Scottish portion, from which it is illustrated. Presumably part of lot 9 in sale V)
4. Obverse same die as 2 and 3
   Reverse +( )V( )SAN (S sideways, perhaps 2 at beginning
   Dr Stewart

The cataloguer in 1940 read another N on the obverse of No. 1a, being misled by the serifs of the missing top of the T. Similarly, the right serif of the A may give the impression of being part of the curve of a D, but this must be rejected, although Davit is the normal reading on obverses of Stewart group I. The obverse die of No. 1 and the reverse dies of Nos. 3 and 4 have large well-formed letters with serifs; although differing in the form of the A, they may have been made at the same die-cutting centre, whereas the dies with serifless lettering may have been made locally, by two different hands. Certainly the second obverse die (which may be classed as group II) was of much inferior workmanship to that of No. 1, with worse lettering than the reverse of No. 1, also.

Several features of the better dies indicate a connection with coins of Stewart group III, i.e. those with good lettering similar to group I, but meaningless legends. The Arabic-2 character on the reverse of No. 3 and perhaps No. 4 may be the same as that which Burns described as a reversed S, on the reverse dies of Figs. 7, 8 and 8A (with some doubt about the first of these).[5] In the case of these St Andrews dies, however, it is natural to look for a meaningful explanation of the character, in view of the rest of the legend and the presence of a normal S, sideways, in the mint name. In fact, an Arabic-2 form of minuscule R frequently occurs in manuscripts of the period, after O or A, and particularly in the abbreviation for final *rum*. Anderson also shows it followed by superscript t, as a contraction for *respondit*,[6] and this, or *respondebit*, might have preceded the name of the responsible moneyer in written instructions about dies for St Andrews, and have been copied by the engraver. This must be regarded only as a tentative interpretation, in the absence of any precedent for this formula on a coin.

Perhaps more informative are some of the details of the obverse die of No. 1, as follows:-

(a) A V of several lines (in this case curved) on the sleeve, to indicate the king's elbow.
(b) An annulet containing a pellet, on the right shoulder, doubtless representing a brooch securing a cloak. (On some coins of Stewart group III, e.g. Stewart Fig. 4, the drapery is shown behind the brooch: and just such a cloak fastening is depicted for Malcolm IV, in the miniatures of the initial letter of his charter to Kelso Abbey in 1159.)[7]
(c) The circlet and arcs of the crown are rendered with short strokes at right angles to the lines.

Details (a) and (b) are found on all four of the obverse dies of Stewart group III coins illustrated by Burns and (c) on at least three of them. Moreover, Burns's description 'parrot-nosed' for B Fig.

[5] Burns, I, 32–5.
[6] J. Anderson, *Diplomatum et Numismatum Scotiae Thesaurus* (Edinburgh, 1739), No. CXLI.
[7] Deposited in the National Library of Scotland. Illustrated in Anderson, No. XXIV.

8B also fits the St Andrews die.[8] These similarities of style are taken to indicate a common source for these dies, without any implication that this need have been at St Andrews. It should also be noted that details (a) and (b) are certainly absent from the majority, if not all, of the well-made Roxburgh and Berwick coins of group I: further work might determine whether the more likely explanation is a change of engraver at a single centre or the use of more than one die-cutting centre. An annulet for the brooch is also present on some Edinburgh coins (e.g. Stewart Fig. 5) of Stewart IVa, i.e. as Stephen Type I, but there the lettering is different. In fact, details (a), (b) and (c) are also found on York coins of the Flag Type, being particularly clear on Mack 217 g.[9]

Acknowledgements
We are particularly grateful to Dr Harris, who recognised the interest of the reverse legend of coin No. 1a, which he bought from a small dealer. He made important progress by identifying the duplicate in the British Museum, which supplied the S of the mint name, before asking for comments from one of us (J. E. L. M.) and subsequently agreeing to sell his coin. We also thank Miss M. Archibald for her help is supplying photographs and casts of the British Museum coin, and in attempts to improve some of the difficult readings. Mr S. Bendall kindly made the casts of Dr Stewart's coins.

[8] Burns, I, 34.

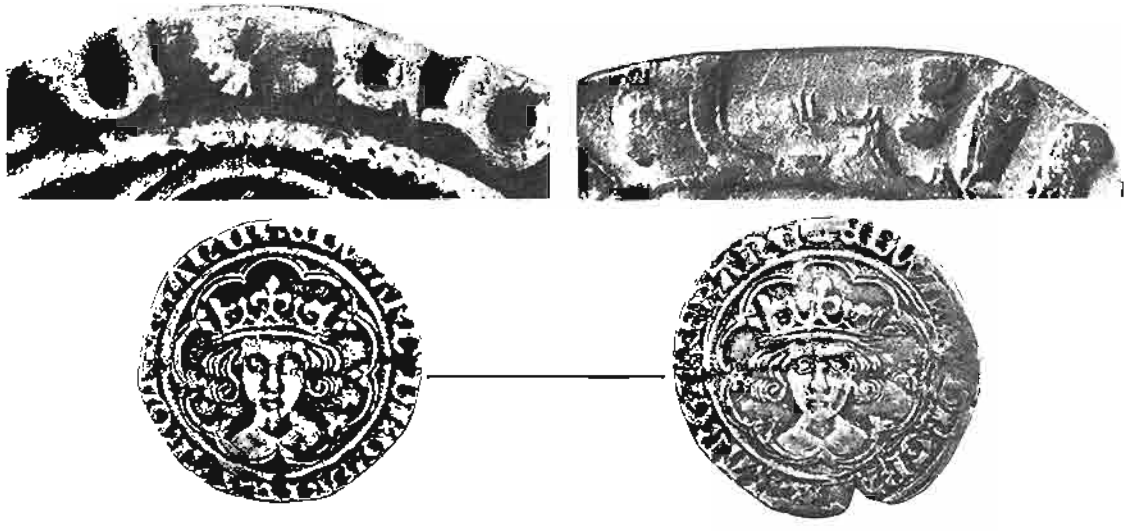
[9] R. P. Mack, 'Stephen and the Anarchy 1135–1154', *BNJ* 35 (1966), Plate VII.

THE GROATS OF EDWARD V

MARVIN LESSEN

IN 1948 Blunt and Whitton listed eleven known obverse groat dies under their type XXII, the sun and rose (S/R) mintmark coins variously attributed to Edward IV and/or Edward V.[1] They further commented that dies 1, 6, 7, 8, and 10 were known with the overstruck boar's head (BH) mintmark. In 1980 Stewart added a BH die link with Blunt and Whitton's die 9, but he was unable to verify a link with die 10.[2] Die 10 has the characteristics of no fleur on the breast, no pellet under the bust, and unbarred obverse A (reverse barred A in TAS, but unbarred A in ADIVTORE). The S/R and BH die link does exist for this particular obverse die, and the coins are illustrated here with enlargements of the mintmarks. In the accompanying table this S/R coin is No. 4 under die 11, and the die-linked BH coin is No. 1 under new Stewart die D.

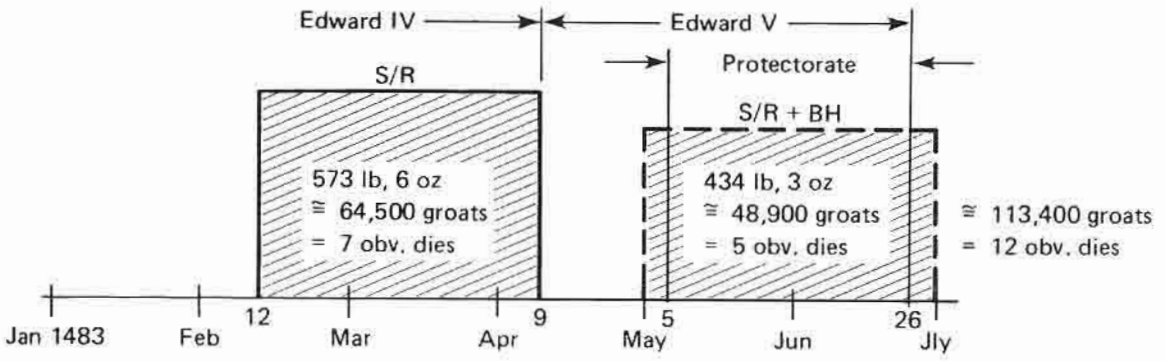
This obverse die link has been established by a very careful examination of the two coins, and the only question that remained was whether or not the second coin's mintmark was indeed a BH and not a blurred double struck S/R. While the coin itself is double struck, this is not a real hindrance to the examination. The right-hand mark, which I shall call a BH, is aligned slightly higher relative to the circle and the C and E on either side of it than is the S/R; the left side of the BH is vertical whereas



S/R (1.5x) BH (1.5x)

[1] C. E. Blunt and C. A. Whitton, 'The Coinages of Edward IV and of Henry VI (Restored)', *BNJ* 25 (1948), 325.

[2] I. Stewart, 'The Dies of Edward V's Silver Coins', *BNJ* 50 (1980), 133, which contains a complete bibliography.



where, weights are of coined silver, in Tower pounds
10,000 groats/obverse die,
smaller denominations are assumed negligible and are ignored.

$$\text{Total groats} = \text{weight of coinage, Twr lb.} \times 5400 \frac{\text{grains}}{\text{Twr lb.}} \times \frac{1}{48 \frac{\text{grains}}{\text{groat}}}$$

the S/R is circular; the entire base of the BH is solid (tusk), but the S/R is hollow; and the tiny protrusions showing below the base of the BH are from the underlying S/R. All in all there is excellent verification that the second coin is a BH. Each of the pairs of photographs presented was made on the same negative so that exact comparison measurements can be made from the enlargements. An attempt was made to find boar's head mintmark punchlinks from the various published illustrations, but this was not successful, and it is not even clear if the BHs were punched into the dies or engraved. Either way, the work was very carefully done to fit properly and hide the original S/R, and this is true for all the re-used dies.

In the paper already referred to, Stewart suggested that the total number of obverse dies and existing specimens should be carefully re-checked to reinforce the Edward IV and Edward V attributions. This has now been done, and the results are detailed in the table, which adjusts the listing of dies and their links as suggested by Stewart. Fifteen S/R obverse dies have been found (fourteen without the unverified No. 13), and thirty-seven (thirty-six) specimens recorded from them. This represents six more S/R dies than Blunt and Whitton found (three of their eleven dies were actually the same, thus they had only nine different dies). There are many reverse dies but, except in certain cases, they have not been studied for this paper. Four of the obverse dies were re-used for the BH groats, and fifteen to nineteen examples are recorded. The literature canvassed for these totals were mainly Sotheby and Glendining sale catalogues from the 1890s on, and post-war Spink and Seaby fixed price lists. By necessity only those coins that were illustrated could be considered since visual examination was the criterion for defining the different dies and links. Most of the illustrated examples were represented by good quality direct photographs or photographs from casts, and there is high confidence that the die identities noted are accurate. Obviously there are specimens that were missed, and there were others that were not illustrated and thus could not be used, although in the case of the BH examples these are noted at the bottom of the table. Whether or not all the different obverse dies are now listed it is impossible to determine, but it is reasonable to assume that there will be further ones. The total number of BH groats that I have recorded for the die studies is probably a more realistic number than is that for the S/R, since the former were more likely to be illustrated over the years.

Depending on which items are included in the count of dies and coins, the ratio of S/R to BH dies can be about 3.8:1, but that of the coins about 2:1, and there is no correlation here. By looking at the coinage weight figures[3] and dates in the following chart, and by choosing a very arbitrary figure of 10,000 coins for an obverse die's output, we can come up with about 113,400 groats from twelve obverse dies, for both mintmarks, for the calendar period under consideration. However, in using this 10,000 coin life figure for an obverse die, we must reduce four of the S/R dies to a half-life each, because they were reused for the BH, and then it follows that the four BH dies had only a half-life each. Thus we have thirteen equivalent 10,000-coin S/R dies ($15 - 4 + \frac{1}{2} \times 4$) and two equivalent BH dies ($\frac{1}{2} \times 4$). This translates to:

[3] Stokes, *NC* 1929, 35. Dr Challis pointed out to me that those silver bullion figures are actually the weight of the coinage output, and not the amount of fine silver passing through the mint as I had supposed.

SUN & ROSE GROATS (B & W TYPE XXII)								BOAR'S HEAD GROATS	
Lessen Obv. Die No.	B&W Obv. Die No.	Breast Fleur ?	Pellet ?	Obv. A	Rev. A (TAS)	Rev. A (ADIVT ORE)	Recorded Examples	Stewart Obv. Die No.	Recorded Examples
1	1	Yes	Yes	No Bar	Bar	No Bar	1. Wheeler (275) = Thorburn (149) = H. Clark (108) = Webb (2017) = Neck.	C	1. BM = North Pl. 3, 25 = Brooke Pl. 35, 1. 2. Lockett (1649) = Walters 1932 (356); 3. *SCMB* April 1958 (3584) pierced, ex. R. Carlyon-Britton & Walters (not in Walters 1917); 4. Dawnay 1922 (51); 5. Blunt; 6. Blunt.
2	2	"	"	"	"	"	1. Lockett (1648) = Webb (2027) = Sainthill; 2. *SCMB* June 1980 (E337).	–	
3	–	"	"	"	?	"	1. *NCirc* Dec. 1977 (13104) = Sotheby 17 Feb. 1930 (228); 2. ANS, NY, from H. Ives 1953.	–	
4	3	"	"	"	"	"	1. Morrieson (211) refers to Sotheby 1904 (218), 2. Mann (251).	–	
5	4	"	"	"	"	"	EDVARD 1. Walters 1913 (462) = Glendining 12 Mar 1970 (181) = *SCMB* June 1970 (H2914) = *SCMB* June 1972 (H2983) = *SCMB* Dec. 1972 (H3406) = *SCMB* June 1973 (H3653); 2. *NCirc* June 1972 (6379).	–	
6	5	"	"	"	"	"	EDVARD 1. Grantley (1458) = Murdoch (372) = Montagu (635). Last two not illustrated	–	
7	–	"	"	"	"	"	EDVARD, 1. Ryan (958); 2 *SCMB* Jan. 1972 (H2427) 47.8 gr. = *SCMB* Sept. 1972 (H3230); 3. *NCirc* April 1975 (3397) = Glendining 4 Sept. 1974 (141) = Lockett (1647) = Bliss (237).	–	
8	–	"	"	"	"	"	EDVARD, 1. *SCMB* May 1959 (4929) = *SCMB* March 1960 (5414), ex R. Carlyon-Britton.	–	
9	7, 8	"	No	Bar	"	"	1 Bascom (100) 40.5 gr. = *SCMB* Jan. 1963 (H1421); 2. Hilton-Price (66) = Murdoch (371) = Nunn (281).	A	1 London market 1982, 2. London market 1982, 3. Wheeler (276) = Roth (228) = Seaby Sid. Cat. 2151, 4. Ryan (959), 5. Sinkler (742) = Lockett (3175) = Walters 1913 (461), 6 Larsen (106) = *SCMB* July 1953 (6304) 40.5 gr ; 7 BM, illust. *BNJ* 22, p. 213, No 8.
	6	"	"	"	No Bar	"	1. *NCirc* June 1971 (6816) = Morrieson (210) = Allen 1898 (412). 2. BM illust. *BNJ* 22, p. 213, No. 7. (1 and 2 same reverse die); 3. Lockett (3174).		
10	–	"	"	"	"	"	1. Lawrence (1218).	B	1. Banes 1922 (34)
	9	"	"	"	Bar	"	1. Bower, Glendining 1977 (318); 2. Parsons 1929 (393).		
11	10	No	"	No Bar	"	"	1. ANS, NY, from H. Ives 1954 = Huth (312) = Montagu (634) = Bergne (469) to Webster=Brice ? 42.5 gr.; 2. *SCMB* Jan. 1957 (Y252) = *SCMB* Dec. 1957 (7297) = *NCirc* July 1973 (5939); 3. *SCMB* Aug 1966 (H3594) = *SCMB* Jan. 1967 (H3876) = *SCMB* June 1967 (H1354), 4. Lessen = *SCMB* Jan. 1959 (X158) 40.5 gr.	D	1 Lessen = *NCirc* Jan/Feb. 1926 (49003) 45.6 gr
	–	"	"	"	No Bar	"	1. *SCMB* March 1983 (E197).		
12	–	"	"	"	Bar	"	1. *SCMB* Nov 1965 (H3055); 2. Lockett (4036); 3. Parsons 1954 (324); 4. Sotheby 22 July 1982 (273). The apparent marks on breast are just overlapping tressure bands.	–	
13?	11	"	"	"	"	Bar	1. Listed by B&W as Baldwin, but not traced, and obv. die could be same as No. 11 or 12.	–	
14 *	–	"	"	"	"	"	EDWRD 1. *SCMB* Jan. 1968 (H1729) from Westminster Abbey chalice, Sotheby 13 Nov. 1967 (48). 2. Bute (75).	–	
	–	"	"	"	"	No Bar	EDWRD. 1. *SCMB* July 1959 (5719) = R. Carlyon-Britton in *BNJ* 27, p. 93, different reverse die from above; 2. *SCMB* Jan 1984 (E18)		

There are several unillustrated Boar's Head groats in twentieth-century catalogues, some of which could be included in the lists above. They are: 1. Walters 1932 (357), no pellet, unbarred obverse A, barred A in TAS, bent; 2. Walters 1932 (358, part), no fleur ?, broken. 3. Montagu (633), ex. Pownall, fleur; 4. Glendining 2 Sept. 1971 (141), pellet, fleur, clipped. The S/R coin in Glendining 18 June 1975 (14) is Richard, not Edward.

*New S/R die 15, in the Wilfrid Slayter collection, has No breast fleur, No pellet, No bar in any obverse or reverse A.

B & W = Blunt & Whitton, *BNJ* 25, p. 325
Stewart = Stewart, *BNJ* 50, p. 134 (die D added), and C. E. Blunt's coins moved from die A to C

13 equivalent S/R dies X 10,000 coins/die = 130,000 coins

2 equivalent BH dies X 10,000 coins/die = 20,000 coins

150,000 coins

which is probably a reasonable correlation with the 113,400 figure, especially so considering the variability of the number of coins each die would produce in the real environment. To accept this analysis leads to a conclusion that about 28,900 groats (48,900 – 20,000) were struck with the S/R during Edward V's reign (May and June) or, more accurately, during the Protectorate. In sum, then, this analysis reinforces the theory that S/R groats were mostly struck late in the reign of Edward IV, were struck again during Richard's Protectorate of Edward V, and then were superseded by the BH groats. The total coins for each type are only illustrative examples that happen to fit the combination of dies and bullion. If, as seems likely, the dies that were selected for re-use with the BH mintmark were those least used at the time, then the pellet, breast fleur, and obverse A cannot be related to date since all types of dies were used for the final, BH, coinage. Inherent to this discussion is the continued suppostiion that the sun and rose mintmark began in February, and that the previous cinquefoil mark was not also used at that time.

This discussion should not be automatically applied to the angels, which have not yet been restudied in the same detail. Whether or not S/R groats should be considered as coinage of Edward V is a matter of definition, mainly commercial, similar to so many other coinages that have extended from a common coinage reign to one that was far less common.

I wish to thank I. Stewart for the idea to do this paper and for his help, and to C. E. Blunt for review and comments. This paper, of course, owes its origins to the pioneering works of Blunt, Whitton, Stubbs, and Stewart, and it should not be studied independently of those earlier writings.

CASTLECOMER TOKENS: SUPPLEMENTARY NOTES

H. E. MANVILLE AND W. A. SEABY

AN inquiry into the number and types of those countermarked tokens, purporting to be for the payment of the Co. Kilkenny colliers in the early nineteenth century, was published in 1967 when some twenty were isolated of which photographs of nineteen were illustrated.[1] Where known pedigrees were given, fifteen, including one contemporary cast counterfeit, were from a single authentic stamp, and four were from a second, said to be a 'recent fabrication' in the W. Talbot Ready sale on 18/19 November 1920.

Since the publication of that paper the following additional information may be added to the pedigrees.[2]

2. Between 'lot 257*' and 'Present whereabouts unknown.' add 'purchased Spink; N. Asherton, Spink Auction No. 6 (Quaglino's, London, 10/11 October 1979) lot 249.'
3. After 'New York buyer;' add 'auction (Glendining, 14 December 1967) lot 249, Pl. IV*; purchased Hearn. Present whereabouts unknown.' After '(Photograph* of obverse of coin obtained' add '; and copies of obverse and reverse from sale catalogue.)'
9. After 'Oct. 1965' add '; photographs* of both faces obtained).'
10. After 'in his collection' add '; purchased by private collector.' and amend to '(Photographs* of both faces of coin obtained).'
13. Amend to '(Photographs* of both faces of coin obtained.)'
14. After 'Helbing sale cat.*' add 'showing both faces.'
16. After 'lot 147' add '; purchased H. E. Manville as example of false mark' and amend to '(Photographs* of both faces of coin obtained.)'
18. After 'purchased Spink' add '; -?-; auction (Joseph L. Lepczyk, East Lansing, Michigan, 22 September 1982) lot 750, withdrawn from sale.' Amend to '(Photograph* of obverse obtained.)'

The question has again been raised as to when the tokens were issued.[3] The *terminus post quem* is 1806 (the date on the latest dollar so far noted having the authentic countermark) and the *terminus ante quem* is 1826 when the Irish currency and British currency were unified (so that 5s. and 5d. Irish would have become 5s. sterling). The first date at which the bullion value of the dollar approximated to five shillings on the London market (thus 5s. 5d. Irish) was between 1806 and 1810 after which for the next four years it fluctuated between 5s. 6d. and 6s. 9d. Then in 1814 it steadied at 5s. for six months until Napoleon's return from Elba when for a hundred days prices shot up but fell again sharply after Waterloo, and the dollar remained at 5s. through the rest of 1815 and 1816. The years 1817 to 1819 seem only an outside possibility for

[1] W. A. Seaby, 'Castlecomer Tokens: An Inquiry', *BNJ* 35 (1965), 139–48 and pl. XV.

[2] 'Castlecomber Tokens', pp. 146–8.

[3] In a letter from Colm Gallagher to the late Antony Gunstone.

21

22

23

24

25

26

B

A (×5)

A (×2)

the issue being somewhat late, although a few Scottish countermarkers remained active at least until 1824. The only likely dates would therefore appear to be 1806–10 and 1814–16; and we must remember that Aquilla Smith in 1855, quoting from a secondary source, suggested that the Countess of Ormonde 'not wishing to lose by the depreciated value of Spanish dollars of which she had a large number, caused them to be stamped five shillings and fivepence and this happened *about forty years ago*'.[4] It therefore seems probable that 1815 may have been the date when this occurred in spite of the fact that 1806 is the latest dollar in eighteen authentic examples so far recovered.

The main purpose of these supplementary notes, however, is to put on record and illustrate four more of the authentic specimens, two of which seem only to have turned up in Ireland during recent years, a third with a pedigree going back to the first decade of the present century, and the fourth from an American source; also to call attention to two more counterfeits, one bearing the false stamp, mentioned above, and a late dollar having an outrageous mark impressed upon the obverse. More important still is the publication of the actual die or puncheon from which coins bearing the principal false countermark were stamped. One other counterstruck dollar, in this instance for an Ulster mill, is also published here as being the only other Irish stamp on Spanish silver specie so far traced.

While the six additional coins bring the known total to twenty-five, possibly twenty-six, C.C.C. specimens, both authentic pieces and forgeries, no claim is put forward that the combined listing is exhaustive. Other examples may be lurking in cabinets both public and private anywhere in the world since at least thirteen are known to have crossed the seas to the Continent and America from Ireland and England during the nineteenth and twentieth centuries; and there is every possibility that a number more will have done so. Furthermore, it is by no means certain that all those in Britain and Ireland have been located, so it is to be hoped that this article may draw yet more information from both collectors and dealers.

In order to continue the sequence, numbering starts at 21 for the Castlecomer colliery tokens.

Authentic (First) Countermark

21. Charles IV, 1799, Mexico. With the letter W on its side scratched in field to the right of bust. -?-; Irish dealer, E. Szauer, 1981. Present whereabouts unknown. Illustration of obverse* from Szauer's advertisement in *Irish Numismatics* 81 (May–June 1981). (Photograph* of obverse obtained.)

22. Charles IV, 1804, Mexico. With two parallel scratches in field to right of bust. -?-; in the Bowles collection before 1909 when it was bequeathed to Bristol Museum. *Catalogue of the Bowles Collection of Tokens, Medals, etc.*, compiled by Richard Quick, Superintendent, published by Bristol Art Gallery and Museum of Antiquities, City and County of Bristol (1909): Section 9 (one of several headed 'Silver Countermarked Tokens') p. 15, No. 16, pl. I, 5*. This collection was merged into the City Museum collection about 1920. The piece in question with other countermarked coins was purchased in 1971 by the City of Birmingham Museum and Art Gallery: Archaeology Department. (Photographs* of both faces obtained.)

23. Charles IV, 1804, Mexico. With the letters L or I(?) W.. cut under the chin. This coin appears to have come from a Waterford source. Auction sale cat. (Sotheby 26 October 1977) lot 377*; purchased by the Irish dealer, Ivan Maxwell, Lifford, Co. Donegal and advertised in *Irish Numismatics* 61 (Jan.–Feb. 1978), 8*; -?-; auction sale cat. (Glendining, 4 February 1981) lot 213: bought in. Present whereabouts unknown. (Photographs* of both faces obtained.)

24. Charles IV, 1806, Mexico. With vertical scratch in field to right of countermark and ASTLE weak. -?-; American dealer, Almanzar; purchased by the Montreal dealer, William Barrett; purchased by H. E. Manville, May 1972. Obverse much enlarged illustrated on the cover and reverse also enlarged to same size on p. 222 of *Irish Numismatics* 30 (Nov.–Dec. 1972)*. (Photographs* of both faces obtained.)

False (Second) Countermark

25. Charles IV, 1806, Potosi. -?-; auction sale cat. (Glendining, 14 April 1970) lot 214, but along with other questionable countermarked pieces it was withdrawn before the sale; auction sale cat. (Sotheby, 16/17 February 1972) lot 471*; now in a private collection. Obverse illustrated* in Sotheby's *Art Auctions 1971-2* (1973), p. 375, English Coins, No. 8. See also *Irish Numismatics* 30 (Nov.–Dec. 1972), 223–4. (Photographs* of both faces obtained.)

False (Third) Countermark

26. Ferdinand VII, 1821, Mexico. A very crudely cut stamp but lettering PAYABLE.AT.CASTLE. COMER.COLLIERY just discernible as well as the value in centre; placed *upside down* on the head of the king. -?-; Spink's forgery trays since 1980. (Photographs* of both faces and enlargement of stamp obtained.)

A. *False (Second) Countermark Die*

Talbot Ready's statement in 1920 of a recent fabrication is now found to be amply justified. Not only have five one-dollar pieces bearing this mark turned up, none with a pedigree going back before the 1914–18 War, but the puncheon itself by which

[4] *Proc. & Trans. Kilkenny & S. E. Archaeol. Soc. (JRSAI)* iii (1855), 367, No. 18.

this countermark was made has been acquired by the Royal Mint for its museum collection now at Llantrisant, Mid-Glamorgan. The die was discovered with others amongst some old stock at Messrs Baldwin's premises and was donated to the Mint by Mr Peter Mitchell during a visit to Mr G. P. Dyer in 1976. The latter has kindly supplied the writers with a photograph of the stamp on its block as well as enlarged and reversed photograph of the die so that details can be compared with impressions of the countermark seen on the dollars, Nos. 16–19 and 25. The stamp measures 36.25 mm by 18.5 mm. It is believed this countermark puncheon was manufactured by the numismatist, W. C. Wells, during the early part of this century, as it is generally accepted that he fabricated a number of other dies for coins and tokens.

B. *Grimshaw, Whitehouse, Token*

Although nothing to do with Castlecomer the last token illustrated on the plate is the only other stamp on a dollar known from Ireland.[5] The example illustrated is also unique in that no further dollars bearing this particular countermark have so far come to light, although a Dundee, Angusshire, halfpenny token of 1796, overstruck GRIMSHAW (obv.) WHITEHOUSE (rev.) is in the collection of the Ulster Museum.[6]

Charles IV, 1794, Mexico. Countermarked 23/GRIMSHAW/S SIX D SIX (in double compartment)/ WHITEHOUSE, the whole set at right angles over the head and bust of the king; pierced at the top for suspension, with split ring loop attached. In a private collection in Florida, U.S.A. (Photographs* of both faces obtained.)

James Grimshaw as well as T. E. Grimshaw of Whitehouse, just to the north of Belfast, were calico printers in the early nineteenth century; and they are so termed in an 1829 directory. By 1838 we have Thomas Grimshaw and Co., calico printers and dyers at Whitehouse; Edmund Grimshaw, flax spinner; Mossley and James Grimshaw & Son, flax spinners, Whitehouse. But the only time the dollar reached 6s. sterling (6s. 6d. Irish) and above was during the second decade of the nineteenth century.[7] After reinstatement of regal currency in 1816/17 the need for Spanish specie used in payment of wages was much reduced in England, but it is probable that the practice lingered on in Ireland as it did in Scotland for quite a few years beyond the period when silver and later copper token coinage was proscribed. The figure '23' suggests that each countermarked dollar was numbered and, as the coins circulated locally amongst the Whitehouse traders, the firm of Grimshaw would redeem them in gold or notes for repayment to their workers.

Acknowledgements

Many persons have been involved in this inquiry and it is not possible to set out individual names, but the writers would like to take the opportunity of thanking all collectively for the help they have given, without which it would not have been possible to carry out this survey.

[5] W. A. Seaby, 'Notes on Countermarking and Defacement of the Official and Unofficial Coinage of Ireland', *Numismatic Soc. of Ireland: Occasional Paper* No. 16 (1973), 7 and pl. II, 34.

[6] Illustrated in W. A. Seaby, 'Employers' Truck Tickets and Food Vouchers issued in Ulster during the latter half of the nineteenth century and the early part of the twentieth century', *Numismatic Society of Ireland: Occasional Paper* No. 8 (March 1969), pl. III, 28.

[7] See above p. 183.

REVIEWS

Sylloge of Coins of the British Isles 28. Cumulative index of volumes 1–20. By VERONICA SMART. London, published for the British Academy by OUP and Spink & Son Ltd, 1981. xl + 118pp.

VERONICA Smart's *Cumulative Index* volume to the first twenty volumes of the *SCBI* series is no mere index but a genuine work of scholarship, and as such it deserves a warm welcome from us. Its gestation has been long and there seems to have been a delay of two years between the completion of the manuscript and publication, as well as a similar delay between publication and the despatch of a review copy, so any comment on it now must have a somewhat historical flavour.

Nevertheless any numismatist with a serious interest in Anglo-Saxon or Norman coinage would be well advised to procure a copy, for apart from performing the normal functions of an index it attempts the heroic task of relating the forms in which moneyers' names are found on the coins to the 'correct' form of their names in Old English, Old Norse, Continental Germanic or other contemporary language. Thus, coins by moneyers whose names appear on the coins variously as Berhtred, Biorhtred, Brihtred and Byrhtred, are grouped together under the common heading Beorhtræd, while another whole tribe of moneyers with names like Brihtric and Byrhtric are listed under Beorhtric. It may seem to some obvious enough that Brihtric and Byrhtric are different forms of the same name, but there are many instances where the link is not obvious – who but a philologist would have spotted that Everat and Frard probably both reflect the name Eoforheard? – and Mrs Smart's readers will be grateful for her guidance on these matters, although occasionally the philologist in her seems to have got the upper hand over what numismatists might regard as common sense; it is odd, for example, that she should hesitate about the reality of the name Hwætnoth and should think that a die-cutter who produced a moneyer's name spelled XLBERTEE was aiming at a name of which the correct form is Engelbert.

It is also worth noting that the volume does contain various significant corrigenda to vols 1–20, partly in footnotes and so readily discernable, but occasionally buried in the text (e.g. the comments on coins of Æthelred II attributable either to Wareham or to Warwick, on p. 108).

H. E. PAGAN

English Hammered Coinage, vol. 1, *Early Anglo-Saxon to Henry III, c.600–1272*. By J. J. NORTH. Second edition, 1980.

A NEW edition of this deservedly popular book is much to be welcomed. The author has striven to be as comprehensive as possible in including new varieties, and he has taken advice from the best qualified scholars in summarizing the current classification of the various series. Among the merits of the work are the very clear drawings of busts, styles of lettering, etc., and the listing of the moneyers known in each type. The plates are made from clear photographs and thriftily offer the maximum number of coins that can be accommodated on the page (but why not with the same numbering as used in the text?). The historical comments are often redolent of an earlier generation. All in all, Mr North is a numismatist's numismatist, and he does the job he sets out to do – namely, *haute vulgarisation* – thoroughly and well.

In publishing terms there should be a large and continuing market for a book of this kind. It will never, of course, sell as many copies as Seaby's Standard Catalogue, for it is far more detailed and covers less ground. One would hope, nevertheless, that it will be possible to continue revising and reprinting it, and that the right balance can be struck between the interests of scholars, the author, the publisher, and purchasers. The author is a middleman, and it is essential that he should receive scholarly support and help. The publisher can serve the general interest by keeping the print run of each edition as small as is commercially acceptable. Here is a case, if ever one saw one, for keeping the text stored in computer memory form, and being able to revise without extensive resetting.

D. M. METCALF

Studies in Northern Coinages of the Eleventh Century. Edited by C. J. BECKER (Det Kongelige Danske Videnskabernes Selskab, Historisk-filosofiske Skrifter, vol. 9, no. 4), Copenhagen, 1981.

THIS elegant volume could be described as a Danish equivalent to the *Commentationes de Nummis Saeculorum IX–XI* – a collection of essays on current problems in the evaluation of the Viking-age coin finds from the Northern Lands. There are five contributions, all concerned to a greater or less extent with the imitation of foreign coin types in Scandinavian workshops. Four of the five deal with imitation of Anglo-Saxon prototypes, while one, by Brita Malmer, discusses imitations of Byzantine miliaresia. (If there are northern imitations of German coins, which after all made up a very large part of the currency, their study is still in the womb of time – but see the Cologne imitation on p. 113.)

Die-linkage is an essential technique in the exploration of coins whose types and legends are misleading. Two substantial and finished mono-

graphs, by Mark Blackburn and by C. J. Becker, are outstandingly successful in creating new facts for the historian, by putting together die-chains involving tens or even hundreds of coins. Blackburn identifies a possibly Danish series of Long Cross imitations, while Professor Becker demonstrates by die-linkage that coinages ostensibly earlier in date must all be assigned to the mint of Lund in the years *c.*1040–*c.*1046.

Michael Dolley's paper on the Helmet type of Æthelred II will be essential reading for English as well as for Scandinavian students, and his shorter contribution jointly with Kenneth Jonsson neatly demolishes an instance where the imitation apparently antedates its prototype – a pretext for a stimulating *tour de force*.

D. M. METCALF

Devon Tavern Tokens. By YOLANDA STANTON and NEIL TODD. Exeter Papers in Industrial Archaeology no. 11. Exeter, 1983. 181 pp., illus.

THIS volume is a welcome addition to the illustrated listings of public house checks which have appeared recently. The Devon series exhibits several unusual features. The issuers showed a particular affinity for small sized flans – usually 18–19 mm diameter – and they bought their checks mostly from local manufacturers – Vile at Newton Abbott, Walker at Barnstaple and Helmore and Seage at Exeter. A third feature is the fequent use of denominations higher than the usual values of 1½d and 3d. At Tiverton, the Barley Mow issued no less than nine values between one penny and one shilling.

Each of the nearly 350 checks is discussed in detail and where possible the issuer has been dated from directory entries. But the organisation of this volume is complicated and is difficult to use for reference. The issues of Exeter and ten adjacent villages as far away as Exmouth, are treated for no apparent reason in a separate section from the rest of Devon and the sections are given duplicate numbering systems.

The illustrations are welcome but it is unfortunate that the already small flans have been further reduced by four millimeters in the printing process. Also, they were issued without captions.

What is clear from this volume is the need for a common format for these county studies. This work has been produced to a generous format – treble spaced lines across a full page – which gives a fat, two-hundred page volume which is cumbersome to use. A double column format based on the new *BNJ* style could have reduced the size by two thirds at no more cost and without loss of clarity.

ANTONY GUNSTONE

PORTRAIT MEDAL FOR THE EIGHTIETH BIRTHDAY OF CHRISTOPHER EVELYN BLUNT

SOME time ago a group of friends and admirers of Christopher Blunt discussed how best to use the occasion of his eightieth birthday on 16 July 1984 to show appreciation for his long and distinguished services to numismatics, history and archaeology. It was very quickly agreed that a specially-commissioned portrait medal would be appropriate. Although a medal was no doubt an obvious choice for the numismatists among his friends, it also carried the advantage of providing an opportunity for young artists interested in taking up the difficult art of coin and medal design.

The Blunt Medal Fund was established for the purpose of paying the artists and covering other necessary expenses. Contributions were invited in a letter signed by the president of the British Academy, the chairman of the British Art Medal Society, and the presidents of the British Association of Numismatic Societies, the British Numismatic Society, the International Numismatic Commission, the Royal Numismatic Society, the Society of Antiquaries, the Society for Medieval Archaeology, and the Wiltshire Archaeological and Natural History Society. A list of those who responded to the appeal is appended.

Mr R. C. Meaden, a former Royal Mint photographer, was commissioned to visit Mr Blunt at his home in Ramsbury to take a series of photographs, and in August 1983 certain promising young artists who already had some experience in medal design were invited to take part in a small competition. They were asked to provide a portrait for the obverse but for the reverse, beyond the suggestion that it should in some way symbolise Christopher Blunt's long interest in coins or else consist of a simple inscription, they were left a free hand. Models were subsequently received from five artists and these were considered by a judging panel whihc met at the Royal Mint under the chairmanship of Dr C. H. V. Sutherland and which included Mr J. Porteous, Mr J. G. Pollard, Miss M. M. Archibald, Mr G. P. Dyer, and the chief engraver of the Royal Mint, Mr H. T. Elsässer. The panel was unanimous in its selection of the work of Miss Annabel Elev of Portobello Green, London. Her design, inspired by pennies of Offa, seemed to the panel not only to show a very pleasing originality but also to succeed in capturing in the portrait those qualities so familiar to Christopher Blunt's friends.

Miss Eley is primarily a jewellery designer but during her training at the Central School of Art and Design she began to take an interest in medals. In her final year, 1981/2, she entered the annual Royal Society of Arts' competition for young medallists and was awarded first prize for her Thames Flood Barrier medal. This success was followed by a commission from the British Art Medal Society, for whom she produced her second medal, Carnival. The Christopher Blunt medal has provided her first medallic portrait, and a portrait is also a feature of the private commission on which she is currently at work.

The special medal in silver for Christopher Blunt was cast by G. W. Lunt & Son Ltd of Birmingham, and on 19 July many of Mr Blunt's friends were at the British Academy to witness its presentation by Dr C. H. V. Sutherland. Bronze specimens of the medal, also cast by Lunt's, were distributed to members of Mr Blunt's family and to those who had subscribed for them.

CONTRIBUTORS TO THE BLUNT MEDAL FUND

Lady Abell
Mr P. V. Addyman
Mr M. R. Allen
Mrs Margaret Amstell
Mr M. J. Anderson
Mr F. K. Annable
Miss Marion M. Archibald
Capt. A. J. Arnot
Miss Eileen M. Atkinson
Mr R. Baker
A. H. Baldwin and Sons Ltd
Mr N. C. Ballingal
Mr J. H. Bamforth
Professor Peter Berghaus
Mr E. M. Besly
Professor Martin Biddle
Mr M. A. S. Blackburn
Mr G. C. Boon
Mr J. D. Brand
Mr R. P. V. Brettell
Dr D. A. Brodie
Professor C. N. L. Brooke
Mr M. R. Broome
Mr J. C. Brunel
Dr A. J. P. Campbell
Mr R. A. G. Carson
Mr M. Y. Carter
Professor Sir Owen Chadwick
Dr C. E. Challis
Mr A. O. Chater
Mr D. S. Chick
Mr J. F. Chown
Mr P. A. Clayton
Mr T. H. McK. Clough
Mr W. H. R. Cook
Mr F. R. Cooper
Copenhagen, Royal Collection of Coins and Medals
The Earl of Cranbrook
Miss Elizabeth Crittall
Mr and Mrs A. A. Cross
Mr E. W. Danson
Mrs M. Delmé-Radcliffe
Mr G. V. Doubleday
Mr R. W. Douglas
Mr E. J. Downey
Mr G. P. Dyer
Mr C. R. Elrington
Mr G. Emblem
Mr G. A. Entwisle
Professor J. D. Evans
Mr John Farquharson
Mr T. P. Fattorini
Mr Daniel Fearon
Mr I. D. Finney
Mr L. H. Fletcher
Lord Fletcher
Mr B. Forster
Mr Frank Forster
Dr W. A. D. Freeman
Mr W. C. French
†Professor G. Galster
Mr N. J. Gordon Clark
Mr James Graham-Campbell
Professor Michael Grant
Professor Philip Grierson
Mr Arthur Grimwade
Mr L. V. Grinsell
†Mr Antony Gunstone
Dr D. B. Harden
Mr M. J. Harrison
Professor and Mrs P. D. A. Harvey
Mr R. N. P. Hawkins
Mr H. E. Hill
Dr P. V. Hill
Dr Rosalind Hill
Dr Catherine M. Hills
Dr I. T. Holloway
Mr G. S. Hopkins
Mr J. H. Hopkins
Professor R. J. Hopper
Dr Spyros Iakovidis
Mr Donald Insall
Mr L. A. Ives
Mr K. A. Jacob
Mr F. C. Jewett
Mr Humphrey Jones
Mr M. E. P. Jones
Professor E. M. and Mrs Margaret Jope
Dr J. A. Kay
Dr J. P. C. Kent
Dr S. D. Keynes
Dr D. G. Kilgore Jnr
Professor Shoji Kiyonaga
Mr F. I. Kormis
Dr J. D. O. Lavertine
Mr E. R. Lax
Mr Marvin Lessen
Mr R. A. Lewis
Dr J. F. Lhotka Jnr
Professor and Mrs H. R. Loyn
Mr R. M. Lubbock
Mr C. S. S. Lyon
Mr David MacDonald
Mr Michael Maclagan
Mr B. M. Mader
Miss Kathleen Major
Professor Brita Malmer
Mr H. E. Manville
The Manx Museum
Professor H. B. Mattingly
Society for Medieval Archaeology
Dr Gay van der Meer
Mr Philip Mernick
Mr Ralph Merrifield
Mr R. A. Merson
Dr D. M. Metcalf
Mr T. S. N. Moorhead
Mrs Ann L. Morley
Mr C. D. Morris
Mr Andrew Morrison
Mrs Anne C. Morrison
Professor Karl Morrison
Miss Sarah Morrison
Mr H. R. Mossop
Sir Godfrey Nicholson Bt
Mr J. J. North
†Mrs E. M. H. Norweb
Mr A. H. Oswald
Mrs D. M. Owen
Mr H. E. Pagan
Professor R. I. Page
Mr T. M. Palmer
Mr J. D. Parry
Mr O. F. Parsons
Mr M. B. Pfeffer
Mr and Mrs John Pinches
Miss E. J. E. Pirie
Mr J. G. Pollard
Mr Leon Pomerance
Mr John Porteous
Mr P. J. Preston-Morley
Mr J. F. Rainey
Dr C. A. Ralegh Radford
Mr E. H. Redfern
Mr N. G. Rhodes
Mrs Eleanore Rigold
Mr H. Riley
Mr T. J. Robertson
Mr K. H. Rogers
The Hon. Sir Steven Runciman
Mrs J. A. Rutter
Mr J. C. Sadler
Mr R. Sancroft-Baker
Mr H. Schneider
Mr S. E. Schwer
Mr Peter Seaby
Mr W. A. Seaby
Mr R. J. Seaman
Mr D. R. Sear
Mr D. G. J. Sellwood
Mr Robert Sharman
Dr C. A. Shell
Mr David Sherlock
Mr Wilfrid Slayter
Dr Veronica J. Smart
Dr Isobel F. Smith
Mr W. J. Smith
Mr F. S. Snow
Spink and Son Ltd
Mr G. D. Squibb
Mr T. Stainton
Mr R. B. K. Stevenson
Dr B. H. I. H. Stewart
Stockholm, The Royal Coin Cabinet
Mr M. J. Summers
Dr C. H. V. Sutherland
Mr and Mrs Bonar Sykes
Mr and Mrs Gordon Sykes
Mr T. Talvio
Dr G. L. V. Tatler
Dr A. J. Taylor
Mr N. Thomas
Mr N. P. Thompson
Mr R. H. Thompson
Professor Bluma Trell
Mr D. G. Waddilove
Dr A. E. Werner
Dr P. D. Whitting
Mr D. F. Wicks
Sir David Wilson
Wiltshire Archaeological and Natural History Society
Mr G. W. de Wit
Mr C. J. Wood
Mr P. Woodhead
Mr W. J. Zimmerman

PUBLICATIONS AND PAPERS OF CHRISTOPHER EVELYN BLUNT 1972–1983

compiled by
R. H. THOMPSON

The bibliography in *BNJ*, 42 (1974) is here continued.

A. PUBLISHED BOOKS AND PAPERS

1972

(*i*) 'Excavations on a medieval site at Huish, 1967–68: coin and jettons', *Wiltshire Archaeological and Natural History Magazine*, 67B, 1972, 125–6.

1973

(*a*) 'The coinage of Athelstan, 924–939: a survey', *BNJ*, 42: special volume for the seventieth birthday of Christopher Evelyn Blunt, published 1974, 35–158, front., pls. i–xxii.
(*b*) 'The origins of the Stafford mint', in *Otium et negotium: studies in onomatology and library science presented to Olof von Feilitzen*, editor Folke Sandgren, Stockholm, 1973, pp. 13–22.

1974

(*a*) 'A new coin of Baldred, king of Kent', *BNJ*, 44, 1974 [published 1977], 75–6.
(*b*) 'The mint-name SEARRUM on a coin of Edward the Confessor', *SCMB*, no. 670, June 1974, 191–2.

1975

(*a*) 'Three tenth-century hoards: Bath (1755), Kintbury (1761), Threadneedle Street (before 1924)', [by] C. E. Blunt and H. E. Pagan, *BNJ*, 45, 1975 [published 1977], 19–32.
(*b*) 'Coins found at Fonthill Gifford in 1861', *Wiltshire Archaeological Magazine*, 70/71, 1975/6 published 1978, 131.

1976

(*a*) *Address on the occasion of the opening of the Usher Coin Gallery on Thursday, 12th March, 1976*, [Lincoln, 1977]. [1], 5 pp. See also 1981(*a*).
(*b*) 'The Church of Saint Alkmund, Derby: the finds: the pre-Conquest penny', *Derbyshire Archaeological Journal*, 96, 1976 published 1978, 42, 59, pl. 3a.
(*c*) 'Grangerized copies of Rudings's [i.e. Ruding's] Annals', *NCirc*, 84 no. 6, June 1976, 226–7.

1977

(*a*) 'Coins from the Winchester excavations, 1961–1973', [by] Michael Dolley and C. E. Blunt, *BNJ*, 47, 1977 published 1978, 135–8, pl. iv.

(*b*) 'A parcel from the Shillington (1871) hoard?', by C. E. Blunt and B. H. I. H. Stewart, *NCirc*, 85 no. 9, September 1977, 354.

1978

(*a*) 'The Droitwich mint and *BMC* type XIV of Edward the Confessor', [by] B. H. I. H. Stewart and C. E. Blunt, *BNJ*, 48, 1978 published 1980, 52–7, pl. iii.

1979

(*a*) 'Some doubtful St Peter hoards', *BNJ*, 49, 1979 published 1980 [i.e. 1981], 12–16.
(*b*) 'A penny of the English king Athelstan overstruck on a Cologne denier', in *Lagom: Festschrift für Peter Berghaus zum 60. Geburtstag am 20. November 1979, . . .* herausgegeben von Thomas Fischer und Peter Ilisch . . . , Münster, 1981, pp. 119–21.
(*c*) 'The Hougham hoard of sceattas, c.1780'; [note on the pot by S. E. Rigold], *NC*, 139, 1979, 108–10, pl. 15.
(*d*) 'The Oakham hoard of 1749, deposited c.980', [by] C. E. Blunt and C. S. S. Lyon, *NC*, 139, 1979, 111–21, pl. 16A.

1981

(*a*) *The Lincoln and Stamford mints in the tenth and eleventh centuries: an address given . . . on the occasion of the opening of the Coin Room at the Usher Gallery, Lincoln*; [illustrations selected by Antony Gunstone], [Lincoln], 1981. 7 pp. See also 1976(*a*).
(*b*) 'Kings and their coinage', in *The Vikings in England and in their Danish homeland: [catalogue of an exhibition at] the Danish National Museum, Brede-Copenhagen, April 11–August 16, 1981, the Prehistoric Museum, Moesgård, Århus, September 5–December 31, 1981, [and] the Yorkshire Museum, York, April 3–September 30, 1982;* catalogue editors Else Roesdahl . . . [and others], London, 1981, pp. 140–2. 'Catalogue entries, following each chapter . . . coins by . . . Christopher Blunt . . . [and others]' – Contents.

1982

(*a*) 'The cabinet of the Marquess of Ailesbury and the penny of Hywel Dda', *BNJ*, 52, 1982 published 1983, 117–22.

1983

(*a*) 'The coinage of Regnald I of York and the Bossall hoard', [by] C. E. Blunt and B. H. I. H. Stewart, *NC*, 143, 1983, 146–63, pls. 22–3.
(*b*) 'Heriger, a moneyer in Edgar's Circumscription Cross type (BMC III)', *NCirc*, 91 no. 9, November 1983, 298.
(*c*) 'Privy-marking and the trial of the pyx', in *Studies in numismatic method presented to Philip Grierson*, edited by C. N. L. Brooke . . . [and others], Cambridge, 1983, pp. 225–30.

B. CONCEALED, SECONDARY, AND MINOR PUBLICATIONS

1972

(*j*) 'Anglo-Saxon and Hiberno-Norse', in *A survey of numismatic research, 1966–1971*, II, edited by Jacques Yvon and Helen W. Mitchell Brown [for the] International Numismatic Commission, New York, 1973, pp. 149–65.

1973

(*c*) 'Personal reminiscences of some distinguished numismatists of a previous generation: a talk given . . . to the British Numismatic Society, May 1973', *BNJ*, 46, 1976 [published 1978], 64–74.
(*d*) 'Exhibitions: three forgeries . . . by . . . Shirley-Fox', *BNJ*, 43, 1973 [published 1976], 168.

1974

(*c*) 'The Archer M. Huntington Medal award: [letter of acceptance]', *Annual report of the American Numismatic Society*, 1974, 38–9.
(*d-g*) 'Joint exhibition by Mr Blunt and Mr Pagan:
(*d*) A penny of Eadmund . . . ;
(*e*) A penny of Eadwig . . . ;
(*f*) "Museum Meadianum" . . . ;
(*g*) List of coins from the Bath (1755) hoard . . . ', *BNJ*, 44, 1974 [published 1978], 89–91.
(*h*) 'Obituary: Commander R. P. Mack, M.V.O., R.N.(retired)', *NCirc*, 82 no. 9, September 1974, 340.

1975

(*c*) 'Exhibitions: [muling between different mints in the late fourteenth and early fifteenth century]', *BNJ*, 45, 1975 [published 1977], 113–14.
(*d*) 'Obituary: Mr D. F. Allen: two careers of distinction', [by C. E. Blunt], *The Times*, 16 June 1975, 16.

1976

(*d*) 'Obituaries: H. H. King', *BNJ*, 46, 1976 [published 1978], 89.
(*e*) 'Obituaries: D. F. Allen, 1910–1975', *BNJ*, 46, 1976 [published 1978], 89–91.
(*f*) 'Obituary: Mr H. H. King', *NCirc*, 84 no. 9, September 1976, 321.
(*g*) 'Correspondence: [Edgar, Circumscription/Cross type, moneyer Herolf]', *NCirc*, 85 no. 2, February 1977, 59. Dated 23 October, 1976.

1977

(*c*) 'Coins', *Annual Report – National Art-Collections Fund*, 74, 1977: special issue to mark the 75th anniversary of the Fund, published 1978, 24–5.
(*d*) 'Reviews: *Coins and coinage in Viking-Age Norway*, by Kolbjǿrn Skaare', *NC*, 137, 1977, 245–6.

1978

(*b*) 'England, medieval', in *A survey of numismatic research, 1972–1977*, edited by Robert Carson, Peter Berghaus and Nicholas Lowick [for the] International Numismatic Commission, Berne, 1979, pp. 271–7. At head of title: 'England, Scotland and Ireland'.

1981

(*c*) 'Obituaries: Mr S. E. Rigold', *BNJ*, 51, 1981 published 1982, 211–12.

1983

(*d*) 'Obituary: Doctor Georg Galster and Doctor Michael Dolley'; written on behalf of the Sylloge of Coins of the British Isles Committee of the British Academy, *NCirc*, 92 no. 1, February 1984, 13.

OBITUARY

A. J. H. GUNSTONE

ANTONY John Harris Gunstone, whose death occurred at Lincoln on 31 March 1984 at the early age of 47, was the son of Gilbert John and Audrey Marguerite Gunstone, shopkeepers in Bath. He was born in Bath 27 January 1937, was educated at the City of Bath Boys' School and took his degree at the University of Birmingham in the School of Ancient History and Archaeology. After three years at Keele as Research Assistant in Archaeology and a short spell in the City of Bath Libraries Department, he moved to the Department of Archaeology, Ethnography and Local History at the Birmingham City Museum where he spent twelve active and fruitful years, from 1962 to 74, the last four as Departmental Keeper. It was here that his interest in numismatics developed. He quickly realised that nineteenth- and twentieth-century tickets, checks and passes, a series of particular interest to Birmingham, had been much neglected and set about building up the museum's collection in this series, encouraged, as he gratefully acknowledges in the introduction to his major catalogue of this material published in 1982, by Mr R. N. P. Hawkins. As a result, the collection of modern numismatic material at Birmingham, now including the C. W. Peck collection of coins of the Soho mint, numbers nearly 50,000 pieces.

In 1974 Gunstone married Rosemarie Chatwin and in the same year was appointed Director of the Lincolnshire Museums and Art Gallery. He could not have arrived at a more exciting time: in that year Sir Francis Hill presented to the City of Lincoln the remarkable collection of some 1,400 coins of the Lincoln, Stamford and Torksey mints that he had built up over fifty years. This most generous gift at once placed Lincoln among the leading coin collections in the provinces, something that was recognized by the county borough council which, as one of its last acts, built a strongroom at the Usher Gallery, primarily to house the Hill collection. Gunstone, it need hardly be said, played a major part in the planning and execution of this important project. As a result it is possible for these coins, many of great rarity, to be seen by the public in secure conditions.

Gunstone had already made two substantial contributions to early English numismatics in the publication in the British Academy series *Sylloge of Coins of the British Isles* of volumes on coins in Midland Museums (1971) and of West Country Museums (1977). These two volumes revealed, to most of us for the first time, the extent of the treasures that are, often hidden away, in local museums and, as every piece is illustrated and, wherever known, its provenance is recorded, have proved of great value to students, as well as providing a measure of security for the collections themselves; the risk of theft must surely be reduced when it is known that a fully illustrated record has been published.

Sir Francis Hill had been urged by Sir Frank Stenton to undertake, in the leisure of his retirement and when he became 'less mobile', the publication of his collection. But leisure he never achieved: he remained as active in his retirement as ever, and he gladly accepted Gunstone's offer to prepare the catalogue. This was first mooted to the British Academy in September 1975 and warmly accepted. By 1977 a third of the photos had been made and a text was foreshadowed by the summer of 1978. In the event it was about a year later that all went to the press. Publication was in 1981. The volume was acclaimed as a work worthy to stand as a monument to both donor and author.

While this volume was in the press, Gunstone had not been idle. Already in 1978 he was reporting that sufficient material was available in south-eastern museums (omitting London) to make a useful volume and that he would like to make a start on it as soon as the Lincoln volume was out of the way. Progress was made, but by the autumn of 1981 there is refer-

ence to ill-health, in spite of which he struggled on against ever-increasing odds. At his death he left a text in an advanced state (beautifully typed as ever by Mrs Gunstone) which it will certainly be possible to complete. Material for the plates is all there and mounting should not present an undue problem. Publication may be expected in 1987.

If I have dealt with this at some length it is because it so well reflects Gunstone's highly professional and dedicated approach to his numismatic work. It is typical of him that he asked that anyone who wished to make a contribution in his memory should do so to the Society of Antiquaries of London. At the time of writing £310 has been received and this will go to the purchase for the Society's library of numismatic books, each of which will contain a ticket recording that it has been given in Gunstone's memory. His early death is a great loss to the subject and to his many friends and admirers. All will wish to offer deepest sympathy to his widow and two infant daughters.

C. E. Blunt

PROCEEDINGS OF THE BRITISH NUMISMATIC SOCIETY, 1983

PRESIDENTS OF THE SOCIETY

1903–08	P. W. P. CARLYON-BRITTON, DL, FSA
1909	W. J. ANDREW, FSA
1910–14	P. W. P. CARLYON-BRITTON, DL, FSA
1915–19	LIEUT.-COL. H. W. MORRIESON, RA, FSA
1920–21	FREDERICK A. WALTERS, FSA
1922	J. SANFORD SALTUS – till 22 June
1922	GRANT R. FRANCIS – from 28 June
1923–25	GRANT R. FRANCIS
1926–27	MAJOR W. J. FREER, VD, DL, FSA
1928	MAJOR P. W. P. CARLYON-BRITTON, DL, JP, FSA – till 20 February
1928	LIEUT.-COL. H. W. MORRIESON, RA, FSA – from 22 February
1929–32	LIEUT.-COL. H. W. MORRIESON, RA, FSA
1933–37	V. B. CROWTHER-BEYNON, MBE, MA, FSA
1938–45	H. W. TAFFS, MBE
1946–50	CHRISTOPHER E. BLUNT, OBE, FSA
1951–54	EDGAR J. WINSTANLEY
1955–58	HORACE H. KING, MA
1959–63	DEREK F. ALLEN, BA, FSA
1964–65	C. WILSON PECK, FPS, FSA
1966–70	C. S. S. LYON, MA, FIA
1971–75	STUART E. RIGOLD, MA, FSA
1976–80	PETER WOODHEAD, FSA
1981–83	J. D. BRAND, MA, FCA
1984–	H. E. PAGAN, MA

THE JOHN SANFORD SALTUS MEDAL

This medal is awarded by ballot of all the members triennially 'to the member of the Society whose paper or papers appearing in the Society's publications shall receive the highest number of votes from the members as being in their opinion the best in the interest of numismatic science'.

The medal was founded by the late John Sanford Saltus, Officer de la Légion d'Honneur, a Vice-President of the Society, by the gift of £200 in the year 1910.

MEDALLISTS

1910	P. W. P. CARLYON-BRITTON, DL, FSA
1911	MISS HELEN FARQUHAR
1914	W. G. ANDREW, FSA
1917	L. A. LAWRENCE, FSA
1920	LIEUT.-COL. H. W. MORRIESON, RA, FSA
1923	H. ALEXANDER PARSONS
1926	GRANT R. FRANCIS, FSA
1929	J. S. SHIRLEY-FOX, RBA
1932	CHARLES WINTER
1935	RAYMOND CARLYON-BRITTON
1938	WILLIAM C. WELLS
1941	CUTHBERT A. WHITTON
1944	Not Awarded
1947	R. CYRIL LOCKETT, JP, FSA
1950	CHRISTOPHER E. BLUNT, OBE, FSA
1953	DEREK F. ALLEN, BA, FSA

1956 F. ELMORE-JONES
1959 R. H. M. DOLLEY, BA, FSA
1962 HORACE H. KING, MA
1965 H. SCHNEIDER
1968 EDGAR J. WINSTANLEY
1968 C. WILSON PECK, FPS, FSA (Posthumous Award)
1971 B. H. I. H. STEWART, MA, FSA, FSA Scot
1974 C. S. S. LYON, MA, FSA, FIA
1977 STUART E. RIGOLD, MA, FSA
1980 MISS MARION M. ARCHIBALD, MA, FSA
1983 DR D. M. METCALF, MA, DPhil, DLitt, FSA

The President, Mr Brand was in the chair at all meetings, these being held at the Warburg Institute, except that in July.

On 25 January Mr Robert Ian Thomas and Mr P. D. S. Waddell were elected to Ordinary Membership. Miss Marion Archibald read a paper entitled 'The dating of Stephen Type I'.

On 22 February, the Hon. Secretary, Mr W. Slayter, was elected to Honorary Membership. Dr Richard Doty, Mr Harvey King, Mr Alan A. Miles, Mr Trevor Maurice Palmer, and Miss Lynette Sellwood were elected to Ordinary Membership. The President spoke regarding the services of Mr Blunt to the Society over a period of fifty years. Mr Blunt then read a paper entitled 'John Ruskin as a Numismatist'.

On 22 March, Mr Robert Ian Thomas was formally admitted to Ordinary Membership. The meeting was devoted to short papers on the hammered series. Mr Martin Allen read a paper entitled 'Some thoughts on Short Cross class 1A'. Mr P. Mernick read a paper on a hoard of forged Scottish Coins from London. Mr J. Bispham read a paper entitled 'Notes on some base issue shillings of Edward VI'.

On 26 April, the President announced the death of our Sanford Saltus Medallist and Honorary Member, Dr Michael Dolley. Mr Mark Ellis Powell Jones was elected to Ordinary Membership. Mr Hugh Pagan read a paper entitled 'The Tower Mint 1660–1750: History, Administration and Moneyers'.

On 24 May, the President announced that the next Journal was to be dedicated to the late Dr Michael Dolley. Mr Mark Ellis Powell Jones was formerly admitted to Ordinary Membership. Mr T. Stainton read a paper entitled 'John Milton, Medallist'.

On 28 June, Lt. Col. and Mrs Murray were elected to Honorary Membership. Mr M. J. Bonser was elected to Ordinary Membership. Short papers on the milled series were then read. Mr A. Wager read a paper entitled 'The purpose and use of pub checks'. Mr G. Sommerville read a paper on overdates. Mr R. Thompson read a paper entitled 'Two tokens of Devonshire industry'. A paper by Mr H. Mountain on variant half sovereigns of 1870, 1871, and 1872 was read on his behalf by Mr G. Dyer.

On 9 July a special meeting was held in the Lecture Theatre of the British Museum. Mr Mark Blackburn read a paper entitled 'Some Irish Sea imitations of the Quatrefoil type of Cnut'. A paper by Mr Dyer and Professor Gaspar on the Vigo coinage of Queen Anne was read by Professor Gaspar.

On 27 September, the President announced the death of our Honorary Member, Dr Galster. Tulane University Library, New Orleans, U.S.A. was elected to Institutional Membership. Dr W. A. D. Freeman read a paper entitled 'Edward the Confessor's mints and moneyers'.

On 25 October, The President announced the death of Mr R. H. Norweb. Mr R. L. Dembinsky and Mr Andrew John Wager were elected to Ordinary Membership; and Mr Benjamin Paul Judah to Junior Membership. Dr Richard Doty was formally admitted to Ordinary Membership. Mr H. E. Manville read a paper entitled 'Lessons from mis-strikes of the early milled period'.

At the Anniversary Meeting on 22 November, Mr Peter Glews and Mr David Leslie Vice were elected to Ordinary Membership. The following Officers and Council were elected for 1984:

President: H. E. Pagan, MA
Vice-Presidents: C. E. Blunt, OBE, FBA, FSA; G. V. Doubleday; C. S. S. Lyon, MA, FSA, FIA; H. Schneider; B. H. I. H. Stewart, RD, MA, DLitt, FBA, FSA, FSA Scot, MP; P. Woodhead, FSA
Director: G. P. Dyer, BSc
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Council's proposal that the subscriptions for 1984 should remain unchanged at £18 for Ordinary Members and £7.50 for Junior Members was adopted. The John Sanford Saltus Medal for 1984 was awarded to Dr Michael Metcalf. The President, Mr J. D. Brand delivered his Presidental Address.

REPORT OF THE AUDITORS TO THE MEMBERS OF THE BRITISH NUMISMATIC SOCIETY

WE have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit. In our opinion proper books of account have been kept by the Society so far as appears from our examination of those books. We have examined the attached Balance Sheet and annexed Income and Expenditure Account which are in agreement with the books of account and no credit has been taken for subscriptions in arrear. In our opinion and to the best of our information and according to explanations given to us, the Balance Sheet gives a true and fair view of the state of the Society's affairs as at the 31st October, 1982 and the Income and Expenditure Account gives a true and fair view of the Income and Expenditure for the year ended on that date.

Astral House,
125–129 Middlesex Street,
London, E1 7JF

FUTCHER HEAD & GILBERTS
Chartered Accountants

21st September, 1983

Balance Sheet as at 31st October, 1982

1981 £		£	£
	GENERAL PURPOSES FUND		
(400)	Balance at 1st November 1981		2,817.24
3,217	*Add* Excess of Income over Expenditure for the year		3,739.40
2,817	SURPLUS carried forward		6,556.64
	Represented by:		
	ASSETS		
160	Library and Furniture at cost less amounts written off		160.00
1,278	Sundry Debtors		1,753.39
6,000	Investment at cost £6,000 City of Cambridge Stock		6,000.00
	Cash at Bankers and in Hand		
12,685	Bank – Deposit Account	22,444.00	
1,915	Current Account	949.38	
1	In Hand	1.64	
22,039			23,395.02
			31,308.41
	Less LIABILITIES		
200	J. Sanford Saltus Medal Fund	200.00	
167	Schneider Research Fund	167.00	
30	Subscriptions received in advance	36.54	
743	Sundry Creditors and Outstanding Charges	943.17	
18,082	Creditors and provisions for Journals	23,405.06	
19,222			24,751.77
£ 2,817			£ 6,556.64

Income and Expenditure Account for the year ended 31st October 1982

1981 £	£		£	£	£
		INCOME			
		Subscriptions and Entrance Fees			
8,377		received for 1982 and earlier years			7,828.83
1,669		Interest received			2,124.51
689		Income Tax recoverable			812.18
1,082		Donations			175.18
		Sale of Publications –			
329		Back numbers			232.46
12,146					11,173.16
		Less EXPENDITURE			
	332	Sanford Saltus Medal		–	
	412	Printing, Postage and Stationery		246.52	
	34	Library – Purchases	481.12		
	–	Binding	42.00		
	123	Insurance	122.76		
				645.88	
	132	Storage of Publications		127.91	
	378	Audit and Accountancy Fees		310.50	
	191	Sundries		159.63	
				1,490.44	
		British Numismatic Journal 52			
	7,100	Provision towards cost	6,500.00		
	227	*Less* overprovisions for prior years	556.68		
				5,943.32	
8,929					7,433.76
£ 3,217		EXCESS OF INCOME OVER EXPENDITURE			£ 3,739.40

PRESIDENTIAL ADDRESS
1983

J. D. BRAND

Membership

FIRST I should report to you on the state of our membership numbers. We have elected or reinstated sixteen members during the year, six have resigned, four have died, and nine have been amoved for non-payment of subscription. This gives a net deficit of three, and our total membership tonight stands at a little below five hundred.

Michael Dolley, a Medallist and an Honorary Member of this Society, was one of the widest known of all our members. He had a great influence on many people. Indeed, I recall a sentence from my speech in 1981 proposing him for Honorary Membership: 'if we discounted, ignored, every word that Michael Dolley had ever published he would still be the prime candidate for Honorary Membership on account of the encouragement he had unstintingly given to so many other numismatists'. His own publication record was actually, of course, quite prodigious, and a bibliography of his works will appear in a memorial volume which some of his friends are organising. An extended obituary notice is printed in volume 52 of our *Journal*, and so I will not say more tonight.

Dolley died at a comparatively young age; only fifty-seven. Georg Galster, another of our Honorary Members, died in September at the advanced age of ninety-four. Officially he retired many years ago from his post as Keeper of the Royal Danish Coin Cabinet, but he continued working in the Cabinet full time until his death, retaining all his faculties and publishing numismatic studies of the highest order. A productive professional career of some seventy-three years is quite remarkable, and cannot be summed up adequately in a few sentences. His death is a great loss to all numismatists, everywhere.

Henry Norweb was not known to me personally. He did not, I am told, publish anything on numismatics himself, but his generous practical assistance to others has been of great value in furthering numismatic research. Nor was Mr Kaplan, senior, known to me personally, but he was a respected dealer in South Africa.

I do apologise for an unfortunate error which crept into my published Address last year. It was Mr Reginald Lubbock who died in December 1981: Mr Richard Lubbock, his son, is alive and well and continues to be a valued member.

During the year we elected three Honorary Members. In February it was our Honorary Secretary, Wilfrid Slayter, for his great services to this Society and to British numismatics in general. In June we elected Mrs Joan E. L. Murray and Colonel J. K. R. Murray. Both of them for their distinguished contributions to Scottish numismatics, yet in different aspects of the subject.

Mr Christopher Blunt has received every honour which is in our power to bestow, so we were in some difficulty when, last February, we sought a fitting commemoration not just of the fiftieth anniversary of his election to this Society, but of fifty years of his continuous service, in one capacity or another, to the Society. Countless times in the last half century Mr Blunt has resolved our problems for us: so again he came to our rescue on this occasion, and he entertained us with a delightful paper on the numismatic activities of John Ruskin. What could have been more fitting, than for us to sit once more at the feet of our doyen!

Finance

After membership comes finance. Our Honorary Treasurer has earlier this evening reported to you on the state of our finances, which are quite remarkably buoyant compared with our struggles over the last few years. Partly this is due to the increased level of subscriptions introduced three years ago, partly due to the great savings made by our new method of producing the *British Numismatic Journal*, and party due to the vigilance of Robin Davis in looking after our affairs.

We are now in the happy position of having funds sufficient not only to publish the *Journal* nominally for 1983 but – to use a simile for effect – more than enough to publish an additional volume of equal size. Not that we intend to do so, but it gives an indication of the options open to us. Inflation is not currently such a problem as it was in the recent past, but inflation is still with us and so, for a Society like ours, there is little real benefit to be gained by simply building up substantial reserves. We need to keep some in hand, but the remainder is better spent than saved: so long as it is spent wisely on things of enduring value. Council has and is considering a number of projects. Last year and this we have spent some money on purchases of books for our library, and we have allocated money for this purpose next

year. We have increased the size of *BNJ* by fifty per cent, and are able to increase it further if sufficient articles of the right quality are received. We are considering whether texts which are really too long for articles in *BNJ* could be published by us as supplements in book form. Other ideas are also being considered. All of them matters which will help to advance the study of British numismatics.

Tonight our Honorary Treasurer, Robin Davis, retires from that Office. Remarkably, for such an onerous post, he is sorry to relinquish the position, but a change in his personal circumstances means that he no longer has sufficient free time to look after our finances in the way he would wish to do. We do thank Mr Davis very much indeed for seeing us through a very difficult period, and for all the time he has devoted to our affairs to the detriment of his own numismatic researches.

The Journal

Our primary purpose as a Society is to publish the *British Numismatic Journal*. Volume 51, of which an advance copy was available at the last Anniversary Meeting, was posted to all paid-up members before last Christmas. Volume 52 is available in advance copies here tonight, and is on schedule to be in members' hands before Christmas this year. These are the first two in our new format, by our new method of producing camera ready copy for the printer on our own electronic Olivetti typewriter. Reaction to the new format has generally been favourable in the circumstances that we are thereby enabled to print many more pages than by traditional setting methods, yet still have approximately the same number of words to a page. Volume 51 was bigger by a half in page numbers than we would otherwise have been able to publish, volume 52 is twenty-four pages bigger than volume 51, and each has cost far less than an old-style smaller volume would have done. Naturally, processing many more pages throws an additional burden on our Honorary Editor, Christopher Challis: a burden which was already heavy. But it is a task which he gladly carries out, and we are very grateful to him.

Whereas only a couple of years ago Dr Challis was in the position of having to refuse high quality contributions simply for lack of space, now, with much more room at his disposal, he is able to shape the contents to a more balanced view of the many and various aspects of British numismatics. An ideal balance can never quite be attained, because he can only include papers which are actually written, but volume 52 in particular is a welcome demonstration of how more pages means more variety.

The new production method itself throws a much heavier workload on the Editors than before. Preparation of camera ready copy involves many more tasks than does the delivery of a pile of variegated typescripts to the printer. To get production under way, I undertook that part myself, and was much helped in the early stages by engaging the professional skills of our member Mrs Crowley, who herself typed the text of more than half of volume 51 and introduced me to her colleague Mrs Wood, who typed the rest of that volume and effectively the whole of volume 52. We are very fortunate to have had the services of two such excellent ladies. Such imperfections as remain in the printed versions are my responsibility.

The flexibility that the new system gives us does, however, bring technical problems. Some of these can be overcome by the Production Editor simply spending a great many hours of his own time on tedious tasks. One particularly difficult problem was solved in volume 52 by reverting to our early custom of binding plates next to the text to which they relate. That practice had been abandoned many years ago on cost grounds, as it was then much less expensive to group all the plates together at the back of the volume. Now, however, there is a very slight cost saving to be made by including the plates at the appropriate points in the volume, and it is more convenient to the reader as well as to the Editors.

For volume 53 Mr Mark Blackburn will replace me as the Production Editor, and I wish him well.

I should not leave the subject of publications without noting that the long paper in volume 51 by Mr Preston-Morley and Mr Pegg, *A Revised Survey of the Seventeenth Century Tokens of Nottinghamshire*, has been issued this last summer as a separate book.

Meetings

If publication is our major function, our monthly evening meetings are an added bonus for those of us who are able to attend. Our Director, Graham Dyer, again arranged an excellent programme of speakers, on a wide variety of topics. Miss Archibald started our programme in January with a review of the evidence for dating the first issue of Stephen, and favoured a span much shorter than was proposed by Mr Seaman a few years ago. In February, as I have already mentioned, Mr Blunt gave us an entertaining account of the numismatic activities of John Ruskin. Three members read shorter papers in March: Mr Martin Allen on some Short Cross pennies, Mr Bishpham on base shillings of Edward VI, and Mr Mernick on a hoard found in London composed of forgeries of Scottish coins. Mr Pagan in April gave us a comprehensive account of the organisation of the Tower mint between 1660 and 1750: a peculiar structure which helps explain some of the curious mint policies in that period. At our Sherry Party evening in May, the speaker was Mr Stainton, who entertained and instructed us on John Milton, medallist. In June we had four short papers: by Mr Robert Thompson on two tokens of the seventeenth century, Mr Sommerville about overdates on shillings, Mr Mountain (read for him by Mr Dyer) on the problems of the slight changes in design of the half-sovereigns

of 1870 to 1872, and Mr Wager on Pub Checks. The last arose out of the colloquium arranged by the Society on that subject in 1982, and a joint paper by Mr Wager and Mr Thompson appeared in *BNJ* 52. After the summer break, we recommenced in September with Dr Freeman on Edward the Confessor's mints and moneyers: an original approach to an often studied period, which brought out many new points of great interest. And last month Mr Manville gave us a comprehensive review of the types of mis-strikes which occurred in the early milled period, and drew from them clues as to the methods of machining which could have given rise to them.

In July, for the second year running, we held a special meeting on a Saturday afternoon; by the kind permission of the British Museum, in their lecture theatre. We heard two papers. The first, by Mr Blackburn, on Irish Sea imitations of the Quatrefoil type of Canute, and the second by Professor Gaspar and Mr Dyer (read by Professor Gaspar) on the Vigo coinage of Queen Anne. Both papers were exceedingly interesting, bringing out new facts. The audience, though enthusiastic, was small, and mostly consisted of people we see regularly on Tuesday evenings. Council has decided not to repeat the experiment of a Saturday afternoon meeting next year, but a different format may be more suitable.

In October we arranged a symposium in Birmingham on the subject of Matthew Boulton and the Soho Mint. Five speakers, Mr Davies of Birmingham Museum, Dr Tann of Aston University, Dr Doty, Mr Wager, and Mr Pollard, gave papers on a variety of aspects of Boulton and his work, and there was a lively discussion period. It was, I believe, the first time this Society has arranged a function at a venue outside London, and the response was such that Council will consider holding special meetings in Birmingham on occasion. The format of a whole day meeting on a single theme is also one which warrants repetition as and when suitable topics arise. Next year, in fact, we are arranging a whole day colloquim, in London, on a Saturday in November, on the subject of the coinages of Carausius and Allectus.

Our Director has had a particularly busy year on our behalf, and we are fortunate that Mr Dyer is still willing to give his time and energy to our communal good.

Library

Our library is the third service we provide for members. Hugh Pagan, our Honorary Librarian, and Peter Donald, our Honorary Assistant Librarian, together with some help from myself, have laboured throughout the year on improving the facilities. There is still much to do, and further volunteer help would be greatly appreciated. In the financial year just ended we have spent about £300 on purchase of books to fill just a few of the many gaps in our holdings. Borrowings by members were at a similar level to that of the previous year, but there were no statistics of members, and others, who use the library for reference purposes only, although it is known that considerable use is made of it in that way.

Our Honorary Librarian also retires tonight, but only because he takes on the higher responsibilities of the Presidency. His term of office has been comparatively short, but very productive in improving the facilities available to us all in the library downstairs. I do trust that he will continue to keep a close interest in the affairs of our library, and thus smooth the path of his successor. We are fortunate, too, in that Mr Donald will continue to work for us in the library, and give us continuity.

The Presidency

You are all aware that tonight I relinquish the position of President. I have served three years in the post, which is rather less than customary: most, but not all, of my predecessors have served the maximum of five years allowed under our constitution. Five years is, however, the maximum – not the norm – and it may not always be in the best interests of the Society for one person to serve five years at a stretch. Three years ago it was necessary to choose as President someone with particular knowledge and skills in financial management. Now, that crisis has passed, and for the time being we are relieved of day to day worry about the very survival of the Society. My specific task has been accomplished, and I came to the conclusion that, as the fundamental reason for my election had disappeared, there was no real justification in my continuing.

In my three years as President I did, however, not confine myself just to financial aspects. It has been an interesting – at times even enjoyable – period. I like to think that my influence has helped the Society progress in a number of ways, and I feel sure that under my successor the Society will progress still further.

In this, the last of my reviews, I should thank many people for the support I have received. The Officers, of course, who have been mentioned by name earlier. The Vice-Presidents and Councillors, from whom I would specially like to mention Mr Woodhead who has given practical assistance as well as good advice. Miss Archibald and Mr Seaman each year arrange the Sherry Party, which is much appreciated by all. Many members, too numerous to name, at meetings and in correspondence. Last, but most, our Honarary Secretary, Wilfrid Slayter.

[The President then read a paper entitled 'Periodic change of type in the late Anglo-Saxon and Norman periods. Part 2'.]

INDEX

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THE BRITISH NUMISMATIC SOCIETY

THE Society was founded in 1904, and is a registered charity (No. 275906). The objects of the Society are:

> The encouragement and promotion of numismatic science, particularly through the study of the coins, medals and tokens of the peoples of the British Isles and Commonwealth and the United States of America, and of the territories as may at any time be or have been subject to their jurisdiction.

Membership is open to all persons and to appropriate institutions. Enquiries about membership should be made of the Secretary:

W. Slayter, Esq.,
63 West Way,
Edgware,
Middlesex, HA8 9LA.

Meetings are held on the fourth Tuesday of each month from January to June and September to November, at the Warburg Institute, 6 p.m. Other meetings may be arranged from time to time. Offers of papers to be read at meetings should be sent to the Director:

G. P. Dyer, Esq., BSc,
The Royal Mint,
Llantrisant,
Mid Glamorgan,
CF7 8YT.

The *British Numismatic Journal* is published annually, and distributed without charge to all members. Persons, whether members or not, wishing to submit an article or short note for publication should write to the Editors:

c/o Dr C. E. Challis, BA, PhD, FR Hist Soc,
School of History,
University of Leeds,
Leeds, LS2 9JT.

To assist contributors in the preparation of typescripts for submission to the *Journal*, and also with the marking up of proofs, Council has agreed to adopt, as far as possible, the conventions set out in the *Style Book* of the Modern Humanities Research Association (third edition, 1981). Copies are available from the Editors.

The Society's library is housed at the Warburg Institute. Members may use the library on presentation of their signed membership card. Books can be sent to members by post on request to the Librarian. Gifts for the library, and books for review, should be sent to the Librarian:

J. D. Brand, Esq., MA, FCA,
c/o The Warburg Institute,
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London, WC1H 0AB.

Annual Subscriptions, currently £18 (Junior Members £7.50), are due on 1 January each year, and should be sent without request to the Treasurer:

T. Stainton, Esq.,
Madeley,
Penn Road,
Beaconsfield,
Bucks, HP9 2LW.

ABBREVIATIONS

BL	British Library, London
BM	British Museum, London
BMA	G. C. Brooke, 'Anglo-Saxon Acquisitions of the British Museum', *NC* 5th series, 2 (1922), 214–44; 3 (1923), 243–59; 4 (1924), 86–95, 239–53; 5 (1925), 343–65.
BMC	*British Museum Catalogue*
BNJ	*British Numismatic Journal*
BSFN	*Bulletin de la société française de numismatique*
CH	*Coin Hoards*
CNS	*Corpus nummorum saeculorum IX–XI qui in Suecia reperti sunt*
DNB	*Dictionary of National Biography*
EcHR	*Economic History Review*
HBN	*Hamburger Beiträge zur Numismatik*
JRS	*Journal of Roman Studies*
NC	*Numismatic Chronicle*
NCirc	Spink's *Numismatic Circular*
NNÅ	*Nordisk Numismatisk Årsskrift*
OED	*Oxford English Dictionary*
PRO	Public Record Office, London
RIC	*Roman Imperial Coinage*
RN	*Revue numismatique*
RNB	*Revue de la numismatique belge*
SCBI	*Sylloge of Coins of the British Isles*
SCMB	*Seaby's Coin and Medal Bulletin*
ZfN	*Zeitschrift für Numismatik*